

White River Junction Village REVITALIZATION PLAN

Final Report



LANDWORKS • RESOURCE SYSTEMS GROUP • PATHWAYS, LLC

White River Junction Village REVITALIZATION PLAN

EXISTING CONDITIONS
& OPPORTUNITIES SUMMARY

FINAL REPORT

FEBRUARY 2009

Prepared for

Town of Hartford

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Overview

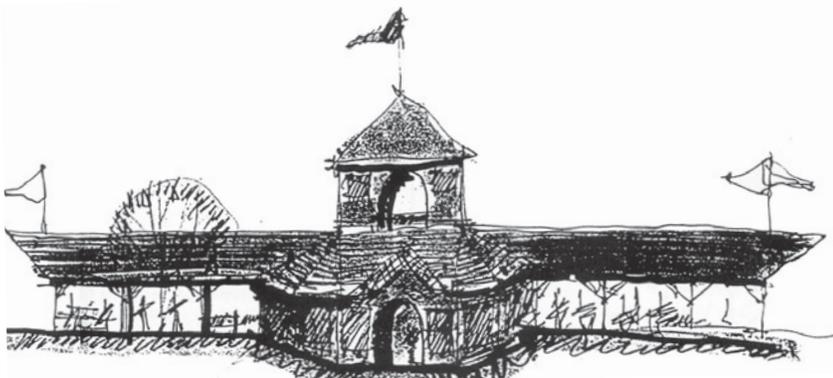
Background for the Project

The current era of renewed vitality and vigor in White River Junction is the culmination of community efforts initiated over 15 years ago when local leaders convened an effort to re-energize the town's urban village. Property owners, business people, residents, local officials and a planning team developed the "River City Revival" project, which included a multi-day retreat, storefront workshops and the preparation of a comprehensive Action Plan for the years 1992 to 2000 that set forth a range of projects, improvements and activities to revitalize the downtown.

Many of the recommendations were modest enhancements that were implemented quickly, such as downtown beautification and the relocation of Old 494 to its current resting place as a prominent downtown landmark. A surprising number of the longer term proposals put forward in that initial effort have also come to pass. Historic lighting and reconstructed sidewalks have been put in place. There is a restaurant in the Tip Top building, Railroad Row has been redeveloped and the riverfront is more accessible with the new Veteran's Park. New retail establishments and new institutions have located here as envisioned. Some projects from the 1992 plan - the American Legion Lot, the Bridge Street Underpass - are still being worked on, and that in itself is a testimony to the plan's sustainability and the vision of the collective effort that conceived it.

One other key initiative that came out of the River City Revival was the establishment of the Hartford Development Corporation (HDC), a volunteer group dedicated to revitalizing downtown White River Junction. That effort has carried through to the current initiative and the HDC has been instrumental in developing the support and energy for reinvestment and enhancement in the downtown.

The success of the downtown's rejuvenation and community vitality has even been quantified, meriting a ranking in the recent book *Boomtown USA*, authored by Jack Shultz. He identifies White River Junction as one of the top "Agurb Winners" for towns that serve rural agricultural regions, putting it in the top 2.5 percent of all non-metro towns in the nation. This is based on a ranking system that evaluates a range of



Architect David Laurin's charette sketch of a "Railroad Square Marketplace" from the River City Revival project

“The intricate life of a small city in central eastern Vermont is too interesting to be ignored. Our present is continuously, and sometimes rambunctiously, transforming into our history.”

– David Fairbanks Ford, Main Street Museum

categories from leadership and vision, the growth and success of the downtown to quality of life issues, such as recreation and healthcare. The 2009 Revitalization Plan is committed to continuing to keep a vital, central White River Junction Village and core downtown.

Since the inception of the River City Revival, a new century - a new era - has emerged and much has changed. There are new companies in town, educational ventures, and developers investing in redevelopment and restoration. The village continues to evolve, but one thing is a given: the work of a downtown is never over, never complete; businesses and buildings change, and new challenges always appear. Although WRJ has so much to offer- a thriving arts community, historic architecture, museums, and riverfront access, it has struggled to attract potential visitors and residents. That is the basis for this new look at the downtown and the possibilities for the future - to fulfill the promise of the River City Revival.

PROJECT DESCRIPTION. This report presents a summary of all the information developed throughout the course of the project and is intended to serve as a multi-faceted reference manual and tool for the ongoing revitalization process.

With the recent surge in private investment in downtown White River Junction, the Town of Hartford decided that it was “time to take a fresh look” at the downtown and determine “where we want to go in the future, and how we will get there.”¹ Picking up from their previous work in guiding the redevelopment of White River Junction, the team of LandWorks, Resource Systems Group (RSG), and Pathways Consulting were selected to lead the next phase of revitalization. The insights and guidance of Hartford’s planners and officials, the Development Corporation, businesspeople, residents and property owners were essential in developing this new Revitalization Plan.

The LandWorks Team performed the following tasks, which are summarized in this report:

-
1. From the initial Request for Proposal

Project Planning Base Map



Aerial photo of the study area.



Photo by Aerial Design

1. **Infrastructure Assessment;** Pathways Consulting focused on analyzing the infrastructure and utility upgrades and studies that will be necessary to accommodate present and future development needs.
2. **Parking Infrastructure and Mobility Assessment;** RSG looked at the current and projected parking needs for future growth scenarios, while also identifying and assessing alternative downtown traffic circulation patterns. In addition, RSG examined opportunities for creating a comprehensive and connected sidewalk network in the downtown.
3. **Streetscape, Landscape and Urban Design;** LandWorks focused on enhancements to the streetscape and open spaces, and they explored urban design and infill options. Represented graphically in the design and development scenarios, they are intended to help envision how White River Junction Village can continue to evolve both in a “big picture” manner and with detailed design enhancements. Improving the pedestrian experience is a key focus of the work, with proposals for pedestrian promenades, a downtown park, continuous public open space, and recreational paths to the river and adjacent neighborhoods.
4. **A Sign and Wayfinding Plan;** in coordination with their work for the Connecticut River Byway Project, LandWorks developed an integrated approach to parking and walking in the downtown

that is supported with signs, maps, kiosks, and directional and identification elements to encourage visitors to park and walk.

- Capital Improvement Program;** the LandWorks team produced cost estimates and prioritized potential improvements.

PUBLIC PROCESS. Participatory workshops, interviews, and presentations were conducted to ensure that the downtown revitalization process was inclusive and reflected the needs of the community.

The “Broadside”, or newsletter, was another aspect of engagement, along with a blog and website to keep track of the project. By involving the local business community and downtown constituencies in the design process, the LandWorks Team has ensured that the plans being developed respond to the needs and interests of the people who live, work and play in this vibrant and compelling locale.

Workshop Overview. As an integral part of preparing the Revitalization Plan Update, the first public workshop was held to engage local businesspeople, developers, town residents, and officials in the visioning process for the downtown. As a community in the process of defining its future direction, this workshop served to focus the energy already being invested in the downtown through the efforts of local government, community groups, and independent investors and entrepreneurs. Over 25 people attended the morning session and contributed insights, ideas, and perspectives on White River Junction’s past, present, and future. The discussion revolved around ways to improve the downtown as well as trying to define the identity and image of the village, as this historic railroad town moves into the 21st century.

Keeping in mind the accomplishments of the first revitalization plan, the River City Revival, the workshop attendees were asked to consider their priorities for the next phase of revitalization. Opportunities for infill development, public open space, tourism, and branding were the focus of discussion.

Walking Tour. “Taking a fresh look” at White River Junction was the concept for the second phase of the workshop, the walking tour. People formed small groups and went out on a chilly November morning with digital cameras to capture with a critical eye visual evidence of issues that they saw in the downtown. Groups were asked to pay particular attention to the following areas of focus:

The new broadside.

Aerial view of the downtown core area.



Photo by Aerial Design

- Walking, driving, biking, and parking – what works, what doesn’t, and what are the concerns for safety, access, and circulation?
- Landscape, lighting, streetscape, and signage; issues and opportunities
- Infill areas, architecture, and opportunities for new development options and approaches
- Greenspace, public space, and parklands – how to build on what we have and consider future enhancements
- Visitors, tourism, and economic development – how to build on what we have and look at what we need...

Workshop ‘Upshot.’ There was no shortage of enthusiasm and passion at the workshop, and attendees expressed a collective commitment to taking the next steps for White River Junction’s future, at the same time recognizing and celebrating it’s unique history and ‘quirky’ character. One of the highest priorities set forth was to build on the current investment in the downtown to encourage further economic and entrepreneurial activity. It was concluded that balancing the needs of local residents and workers with a desire to increase tourism will be one of the primary challenges. With a thriving arts community, a number of successful new businesses, and a dynamic historical and geographic context, those with an interest and involvement in White River Junction are poised to build on the previous accomplishments of the ‘revival’ and infuse further vitality into this unique community. The workshop represented the first stage of a dialog that continued among local businesspeople, residents, and municipal planners. The developing synergy significantly informed and guided the activities and efforts for the planning and design team as they crafted a strategic plan to sustain White River Junction well into the 21st century. A summary of the issues, opportunities, and concerns that emerged from the public process is represented in Chapter 4.

Infrastructure Assessment

Introduction

The Town of Hartford appropriately identified infrastructure as an important component in the White River Junction Revitalization Plan. The scope and intent of this effort is to initiate an ongoing program to inventory the existing downtown infrastructure and plan for improvements to accommodate future development trends. This task alone could easily become a substantial effort. In keeping with the Town's stated needs, the scope of this task is limited to research and planning-level analysis that will direct future work by identifying infrastructure issues and identifying areas of focus for future infrastructure improvements.

Information resources for this section include:

- Interviews with Hartford Department of Public Works (DPW) staff, Town Planning Department staff, utility company representatives, and local consultants familiar with Hartford and White River Junction.
- Review of Chapter VII of the Town of Hartford Master Plan (Adopted June 5, 2007).
- Review of existing plans provided by DPW Staff.
- Review of the "Preliminary Engineering Report Regarding the Hartford Wastewater Collection System Investigation and White River Junction Treatment Facility Expansion Study," prepared by Forcier Aldrich & Associates, dated July 2008.
- Visual survey of the project area.

INFRASTRUCTURE DISCUSSION. The White River Junction Village relies on a network of utilities to support existing densities and, barring substantial reconstruction efforts, will need to rely on the same network for revitalization and redevelopment efforts.

Inventory of Utilities. Inventory plans of the water, wastewater, overhead utilities, and stormwater networks have been completed as part of this study (see *Appendix*). These inventories are based on existing plans of areas in the Downtown that ranged from schematic information to record and as-built drawings. These first generation inventory plans compiled much of this information to provide a baseline plan of the existing Downtown infrastructure. The Town will be able to enhance these inventories as project work progresses.

Water Supply. The Town of Hartford water system consists of two water treatment plants that draw water from wells. The water treatment plant and wells in Wilder serve the White River Junction Village. Upgrades to the Wilder Water Treatment Plant and construction of a new well in 2004 have increased the capacity to over 2.1 million gallons per day (MGD).

The water distribution system within White River Junction Village consists of a network of mains and service lines that vary in age and condition. The first water system that served the White River Junction was a private system using the Boston Lot Reservoir in Lebanon, New Hampshire, and served the core developed area from West Lebanon to White River Junction. This system began operation sometime around 1917 and there is anecdotal evidence that some existing underground utilities may have been constructed prior to this. At the time of this report, there is no known documentation as to the age of the water mains in White River Junction and it is likely that some mains date back to this era.

The DPW conducts an ongoing Town maintenance and repair program of the water supply network. Generally, with the exception of the need to respond to emergency breakages and repairs, this maintenance program follows the priorities outlined in the Master Plan. The DPW staff has stated overall satisfaction with the condition of the water distribution system with the understanding that certain repairs are necessary.

The following repair and maintenance projects are either outlined in the Master Plan as system maintenance priorities or part of the overall maintenance effort:

- Replace approximately 2,200 feet of cast iron water main along South Main Street.
- Repair or replace other segments of cast iron water main in the downtown area.
- Replace approximately 300 feet of water main along Currier Street.
- Conduct hydrant flow tests to quantify available flow and pressure at various points in the distribution system.

Wastewater Network. Similar to the water supply, the wastewater collection network in White River Junction includes features that vary in age and condition. The Downtown sewer mains are at the terminus of the collection network just before reaching the White River Junction Treatment Facility (WRJTF). The original design intent for the older segments in this collection network was to collect sanitary sewer and stormwater from the roofs and streets in the White River Junction Village. Since the 1980's, the Town has been working to separate the sanitary and stormwater flows in order to improve available treatment capacity at the WRJTF and avoid overflows of untreated wastewater into the White and Connecticut Rivers during storm events. The general understanding is that the current wastewater and stormwater collection networks are separate with anecdotal evidence that some storm drains and/or roof drains still flow into the system.

As part of the Town-wide maintenance program, the DPW has been working to clean and evaluate certain segments of the wastewater network in the Downtown. Overall, based on DPW staff comments, the

wastewater disposal pipe network serving the White River Junction area is adequate at this time. There is a general understanding among DPW staff that a regular maintenance program is necessary in the Downtown.

The WRJTF serves three villages in Hartford: White River Junction, Wilder, and Hartford Village. Currently, the facility has a treatment capacity of approximately 1.2 MGD with a peak design flow of 4.0 MGD. It should be noted that the DPW maintains 8,300 gpd in reserve treatment capacity for the Downtown as part of the allocated development commitments.

The July 2008 Preliminary Engineering Report for the wastewater network states that the WRJTF plan is near capacity (approximately 90% capacity) with regard to the Town's commitments to existing and approved development. Two major development areas may introduce another 30% more flow to that plant, which leads to the study recommendation to expand or upgrade the facility.

- There is evidence of substantial inflow into the existing sewer collection network in Hartford, which means that groundwater is seeping into the sewer network, thereby affecting hydraulic and treatment capacity at the WRJTF.
- The study states that the sewer treatment plan capacity to treat projected inflows sufficiently is a more significant issue than the hydraulic flow capacity of the sewer collection network. The collection network appears to have sufficient capacity for the existing flows and possibly for future flows.
- There appear to be relatively few issues regarding the collection network's physical condition. Further investigations into the physical condition of the collection network will be incorporated as part of the Phase II study.

Regardless of the Downtown reserve treatment capacity the short-term constraint to redevelopment and revitalization in the Downtown is the treatment capacity of the WRJTF.

Stormwater Network. The existing stormwater network consists of catch basins and drain lines on both public and private property. Record documents supplied by the Town indicate that the most recent substantial improvements to an area of the stormwater network occurred with the Combined Sewer Separation project in the early 1990's. This project included construction of new stormwater sewers along North Main Street, Currier Street, Gates Street, Bridge Street, and Church Street. The remaining areas in the Downtown appear to be operable with no known issues with regard to the network capacity to accommodate stormwater flows during storm events.

Electric Service and Overhead Utilities. Green Mountain Power (GMP), the electrical utility that reliably serves the Downtown. The combined proximity of a local transformer substation and the presence of substantial electrical power supply lines throughout the Downtown ensure that there is sufficient capacity for existing and future increased demand in the Downtown.

Overhead utilities present a challenge to the Downtown. The majority of the power utilities and a substantial portion of other communications utilities comprise the overhead utility network. Overhead utilities in such a densely developed area as the Downtown presents practical and aesthetic issues that may affect the development and/or redevelopment potential of certain properties. Based on this condition there are three options for the Town to pursue with regard to overhead utilities:

- Place the overhead utilities in underground conduit and vaults within the existing roadway rights-of-way or along easements on private property.
- Simplify the apparent tangle of utility poles, wires, and transformers by consolidating the electrical services to a building or block of buildings.
- Do nothing and maintain the existing overhead network as needed.

This planning-level analysis cannot fully address the issues and options related to the above alternatives. There clearly is not one single solution, nor is there one clear issue to resolve. In some cases, consolidating or placing overhead utilities underground may be strictly an aesthetic concern. In other cases a utility alignment, a utility easement, or the need to upgrade the utility service to a property affects the cost-effective developability of a lot.

Notwithstanding the reasons for the alterations, such work can be costly to the Town or the developer when the work is effectively discretionary, or not necessary as part of a broader public works project. The following bullets summarize a general list of considerations and costs for a project in the Downtown:

- Consolidating existing overhead services will require coordination among the utility companies and the property owners affected by the project (each line to a building serves a specific user for a specific utility). Overhead services to a building include providers other than the electrical utility. Substantial changes to the overhead utilities will require coordination with each respective utility.
- Changing the alignment of any utility will require a clear understanding of the necessary easements along the proposed alignment, obtaining and recording the easements. Also, there will likely need to be consideration of removing or altering unused easements to release the private property from unnecessary encumbrances.
- Altering the location or service connections on a certain utility pole for any reason will have secondary impacts to adjacent utility poles and properties being served by the utility. This “ripple effect” will need to be considered closely, since it has potential to expand an apparently simple alteration to the overhead utility network into a significant and costly undertaking.
- Many utility poles have power transformers mounted onto them. If a utility alignment is placed underground, there will need to be consideration of where and how the transformers will be placed (i.e.: on the ground or in an underground vault).

- Reconfiguring to underground conduit may require a fundamental change to each affected electrical/communications service and the building's interior wiring. This cost is typically borne by the individual property owners.

Representatives of GMP recommend that the Town and any developers carefully consider any approach to altering the existing overhead utilities. Such a project will require a collaborative effort among the property owners and stakeholders affected by a proposed project, each utility company, and the Town. As in any plan, the recommendation is to understand the long-term goals for the Downtown. If the goal is to place all utilities underground, then plan for it. An incremental, or piecemeal, approach may have an unintended consequence of complicating the utility network in the long run. The following bullets summarize ideas to help facilitate the next steps for overhead utility planning:

- Assemble a committee of community representatives and property owners to define the short-term and long-term goals for overhead utilities in the Downtown.
- If there are specific development proposals, evaluate how these proposals may complement the community goals for overhead utilities. Invite developers to join the committee to participate in the planning process.
- Communicate openly with the utility companies about these stated goals. Include the utilities in the process at the planning level through to design and construction. The earlier utility companies know of these plans in the planning and development process, the better.
- Consider hiring a utility consulting firm to develop a planning study based on the scope of work defined by the committee.
- This work is potentially costly and time consuming.

Communications Service. Due to the concentration of residential, commercial, and institutional uses, the Downtown has access to all major forms of information and communication services. The Downtown enjoys the additional benefit of hosting a telecommunications hub. The Town is participating in a multi-town initiative for developing a regional broadband communications network. These communications assets provide White River Junction with reliable communication services.

Capital Improvement Plan

The following recommended efforts focus on the prioritized list of infrastructure improvements for the Downtown. The estimated costs, which are listed in the appendix of this report, are intended as an order-of-magnitude opinion based on the current scope of work. These costs can be refined further with detailed work scopes that will evolve along with the on-going planning and implementation efforts.

- **Infrastructure Improvements at the Miller Auto/Legion Parking Lot:** Redevelopment of the Miller Auto and Legion Parking Lot parcels has been identified as a major component and priority in the Downtown revitalization effort. Utilities planning for the concepts presented in this report included developing a schematic scope for utility improvements and new utility construction. The more substantial utility improvements include constructing a new water main loop through the redevelopment site from Gates Street to South Main Street and reconfiguring the existing overhead utilities. As discussed above and in the planning-level opinion of probable costs, the Town and individual property owners are encouraged to coordinate with the electrical utility and other utilities to develop a scope and cost for work related to overhead utilities. Utility improvements with limited scope include service connections to the sewer network and limited modifications to the stormwater network. The general assumption for stormwater is that the project will comply with current state and federal stormwater regulations prior to discharge into the Downtown stormwater network.
- **Detailed Infrastructure Database for the Downtown:** This effort would essentially take the information assembled as part of this study and enhance the information in a Geographic Information System (GIS) for reference by the Town and the general public. Much of the document history for the water, sewer, and stormwater networks is accessible in the DPW archives. This task would include verifying the existing information through conducting field investigations to augment the GIS database. The task would focus on investigating existing structures and cataloguing field observations into a georeferenced attribute database. The resultant database, when properly maintained over time, will provide a reliable infrastructure planning and maintenance resource for the Town.
- **Phase Two Infrastructure Investigation:** A second phase of work for the Downtown infrastructure inventory would include further investigations into the physical condition and alignment of underground sewer and stormwater pipelines. This effort might take place by using one of two methods: (1) hire videographers who specialize in conducting video inspections of stormwater and sewer lines, or (2) conduct smoke or dye tests to establish flow origins and destinations. The former investigation would collect extensive information on a limited study area. The latter would provide information on the broader sewer and stormwater networks in terms of flow direction and connections between structures. Both investigations are useful in further developing a comprehensive database of the Downtown

infrastructure. The field observations during the first phase of work will inform the needs in this second phase of work.

- Sewer Network Inflow and Infiltration Investigation: Our research to date has indicated that there is sufficient ambiguity between the design plans on file at the DPW and actual field conditions to justify recommending an Inflow and Infiltration (I/I) Investigation of the Downtown area. The recent study of the sewer network provides preliminary reports that the structures in other areas of Hartford appear to have I/I issues. The first phase field observations and second phase investigation will greatly enhance the available information and allow for a well-considered opinion about the need for and scope of an I/I investigation. Specifically, this study would determine whether the Downtown area sewer demand matches the water supply demand through a three-month water demand and sewer flow-monitoring program. The resultant data will confirm whether groundwater or stormwater is flowing into the system within the Downtown. Ultimately, addressing any I/I issues in the Downtown will benefit the overall WRJTF capacity and provide the Town with a benchmark set of data to document existing demands, which will be invaluable when planning for future growth in the Downtown.
- Hydrant Flow Tests: We understand that the DPW regularly conducts hydrant flow tests to evaluate the overall conditions of Town water mains. We recommend incorporating this information as part of the infrastructure database. If the first phase of work indicates that there is a need to evaluate a segment of water main beyond the DPW's maintenance schedule, then an independent contractor can conduct the flow test.

The information obtained from these investigations will contribute to an evolving infrastructure inventory that will help public and private interests understand the near-term and long-term infrastructure needs.

The 2007 Master Plan contains certain recommendations related to maintenance and repair of infrastructure and support facilities in the Town. The following bullets summarize these recommendations as they pertain to the White River Junction revitalization efforts:

- Continue a regular maintenance and inspection program for water and wastewater systems.
- Establish a reserve fund for equipment replacement for water and wastewater treatment facilities.
- Replace approximately 2,200 feet of 8" water main with 12" water main on South Main Street.
- Clean and line or replace all unlined cast iron water mains in the system.
- Structure utility rates to cover the costs of proper operation and maintenance of the wastewater and water systems.
- Support efforts to upgrade and improve broadband access, especially in the Town's growth centers.
- The following suggestions support the recommendations in the Master Plan and the above tasks with the intention to promote revitalization of White River Junction:

- Continue maintenance programs and reviewing opportunities for expanding treatment capacity at the WRJTF.
- Follow the Master Plan maintenance and repair priorities, as stated above.
- Part of the scope of this study included providing a digital plan of the White River Junction Village infrastructure. The intent is to provide a base map to enhance and improve upon with the subsequent phases of work and ongoing development of the Downtown.
- The goal for this effort is to initiate development of a dynamic digital database of all underground and overhead utilities that begins with digitizing existing data on record at the DPW and continues with updates that based on public and private maintenance and improvement projects. Such a system will provide Town staff with the opportunity to maintain an infrastructure planning and maintenance resource.
- The critical short-term issues include addressing the potable water supply network and treatment plant and wastewater treatment plant capacities. Resolving these issues will greatly improve the prospect of revitalizing the Downtown.
- Computer models of the water distribution and wastewater collection networks will prove to be beneficial long-term planning tools for the Town of Hartford.
- Further work could expand the inventory effort town-wide and spur further opportunities for the Town to develop computer models of the water and wastewater networks. These models will provide guidance as to proposed development impacts on these networks and help the Town anticipate and plan for improvements.

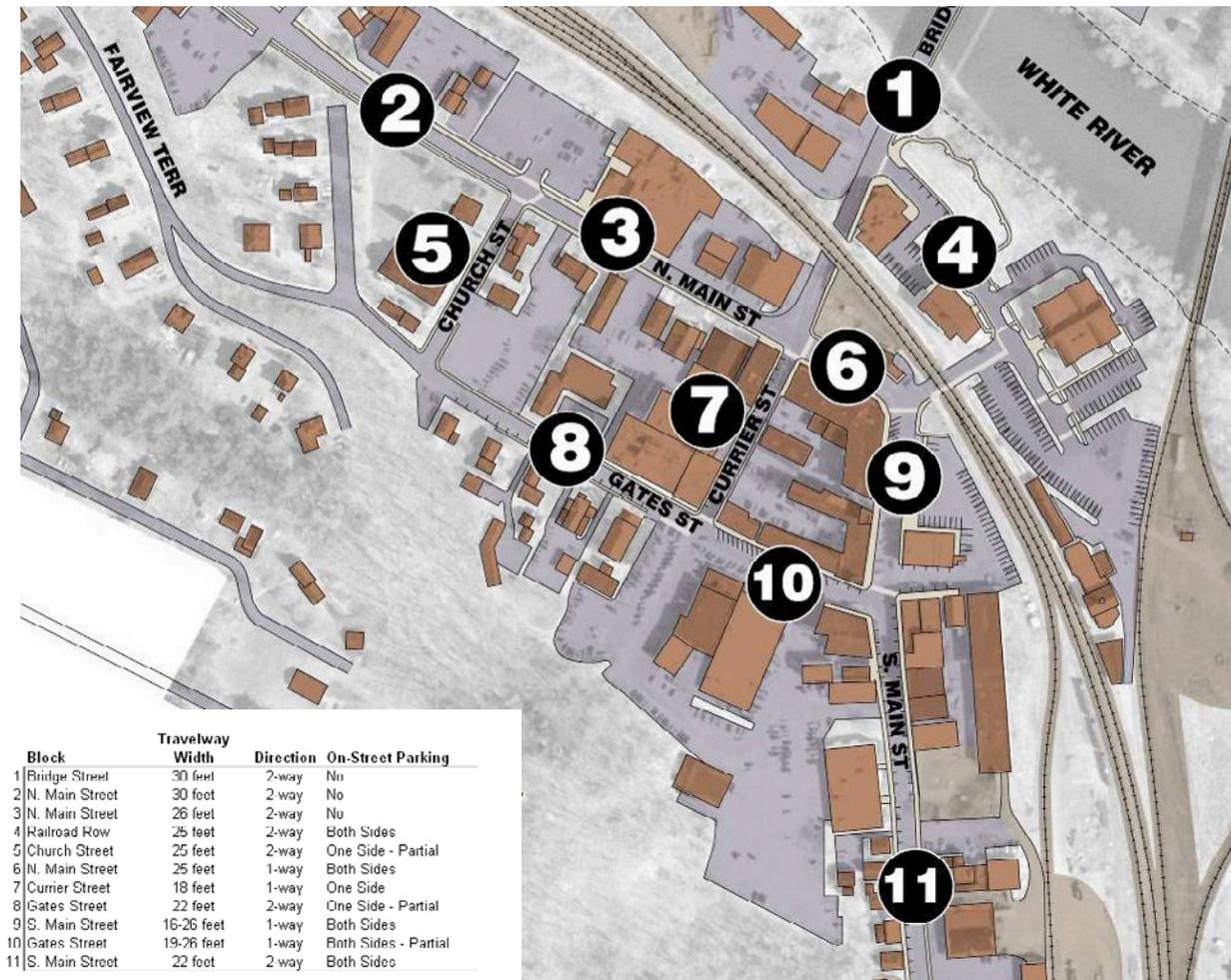
Parking Infrastructure & Mobility Assessment

Street and Sidewalk Assessment

DOWNTOWN STREET ASSESSMENT

Figure 1 below shows an overview of travelway width, traffic circulation, and on-street parking on eleven blocks in downtown White River Junction. As the figure shows, lane widths range from a minimum of 11 feet on South Main Street south of Gates Street up to a maximum of 26 feet on South Main Street north of Gates Street. *The Vermont State Design Standards*¹ recommend a minimum lane width of 11 feet for streets with moderate traffic volumes in urban settings.

Figure 1: Road Width, Circulation, and On-Street Parking Overview



1. Vermont Agency of Transportation, 1997

TRAFFIC CIRCULATION ASSESSMENT

Traffic in the center of town currently follows a one-way clockwise circulation pattern flowing from North Main Street to South Main Street to Gates Street to Currier Street. This one-way circulation pattern has the primary advantage of freeing up space for additional on-street parking. However, the one-way pattern does have several identified disadvantages, including:

- Potentially confusing routing for drivers unfamiliar with White River Junction;
- Necessity for extra signage (e.g. “One Way”, “Do Not Enter”) to clarify circulation pattern;
- Potential for unsafe conditions where drivers inadvertently travel the wrong way on the one-way streets. For example, the northbound approach to Gates Street from South Main Street relies on two signs and often faded striping to direct drivers into the clockwise circulation pattern on Gates Street.

Traffic Circulation Alternatives. During the development of this Revitalization Plan, a number of circulation alternatives were developed and presented to Town officials, residents, business owners, and other stakeholders for review and comment.

Four alternative circulation patterns, along with the existing pattern, were evaluated with the stakeholders along with advantages and disadvantages of each scenario. Two of the alternatives assumed a new Currier Street extension connecting the southern end of Currier Street to South Main Street via the Miller Auto and Legion lot parcels to provide greater connectivity in the southern end of downtown White River Junction.

The downtown traffic circulation alternatives along with advantages and disadvantages are presented in Figure 2.

Two-Way Downtown Circulation Alternative. Alternatives #1 and #3 presented in Figure 2 above involve a conversion to two-way traffic on certain sections of downtown streets that are currently one-way. To determine whether the current one-way downtown circulation pattern could feasibly be reverted back to a two-way circulation pattern, we examined the traffic flow, geometric, and parking impacts related to the circulation change.

On Wednesday 12 December 2007, RSG conducted morning, midday, and evening peak hour traffic counts at the North Main Street/Bridge Street/Currier Street intersection, the South Main Street/Joe Reed Drive intersection, the South Main Street/Gates Street intersection, and at the Gates Street, Currier Street intersection. Using these counts and an understanding of downtown flow characteristics, we estimated traffic volume distributions if a two-way downtown circulation pattern were implemented.

Figure 3 shows peak hour volumes during a typical weekday morning, mid-day, and evening period under the current 1-way circulation pattern and estimated for a 2-way circulation pattern. The table shows that the downtown volumes generally peak during the midday period but remain relatively low throughout the day.

Figure 2: Downtown Traffic Circulation Assessment

	<p>Existing Circulation Pattern</p> <p><u>Advantages:</u></p> <ul style="list-style-type: none"> Local drivers familiar with pattern Least expensive – no additional signs or infrastructure costs No net loss of parking Opportunities to reclaim sections of wide roadway (e.g. N. Main) for additional landscaping. <p><u>Disadvantages:</u></p> <ul style="list-style-type: none"> One-way pattern may be confusing to visitors Makes certain locations hard to reach Potential for unsafe conditions when driver’s do not follow one-way pattern correctly Requires numerous regulatory signs (e.g. One Way, Do Not Enter, etc.)
	<p>Option #1: Two-Way Main Street & Gates Street with Reversed Currier Street</p> <p><u>Advantages:</u></p> <ul style="list-style-type: none"> Allows for more flexible routing options More intuitive circulation pattern for visitors Opportunity to reduce number of regulatory signs <p><u>Disadvantages:</u></p> <ul style="list-style-type: none"> Loss of 23 public parking spaces Lose opportunity to reclaim wide sections of existing roadway Requires changes to existing curb lines in various locations
	<p>Option #2: Larger One-Way Loop with Church Street</p> <p><u>Advantages:</u></p> <ul style="list-style-type: none"> Frees up space on N. Main Street for on-street parking <p><u>Disadvantages:</u></p> <ul style="list-style-type: none"> One-way pattern may be confusing to visitors Difficult for large vehicles to turn left from Church Street onto Main Street Increases traffic volumes on Church Street Makes certain locations harder to reach Certain trips are made much longer Potential for unsafe conditions when driver’s do not follow one-way pattern correctly Requires additional regulatory signs (e.g. One Way, Do Not Enter, etc.)
	<p>Option #3: New Currier St Extension with 2-Way Currier St</p> <p><u>Advantages:</u></p> <ul style="list-style-type: none"> Encourage/support revitalization of south end Extends downtown grid / creates additional road frontage Makes Miller Auto site more accessible Help to drive traffic to South Main Street Help to increase sense of “safety” in Legion Lot <p><u>Disadvantages:</u></p> <ul style="list-style-type: none"> Loss of 10 parking spaces on Currier Street Not recommended without firm redevelopment plan for Miller Auto site. Loss of parking in Legion Lot Relatively high cost for new infrastructure (road, sidewalks, drainage, etc.)
	<p>Option #4: New Currier Street Extension with 1-Way Currier Street</p> <p><u>Advantages:</u></p> <ul style="list-style-type: none"> Encourage/support revitalization of south end Extends downtown grid / creates additional road frontage Makes Miller Auto site more accessible Help to drive traffic to South Main Street Help to increase sense of “safety” in Legion Lot <p><u>Disadvantages:</u></p> <ul style="list-style-type: none"> Not recommended without firm redevelopment plan for Miller Auto site. Loss of parking in Legion Lot Relatively high cost for new infrastructure (road, sidewalks, drainage, etc.) One-way pattern on Currier Street extension potentially confusing.

Figure 3: Peak Hour Volumes under 1-Way and 2-Way Circulation Pattern

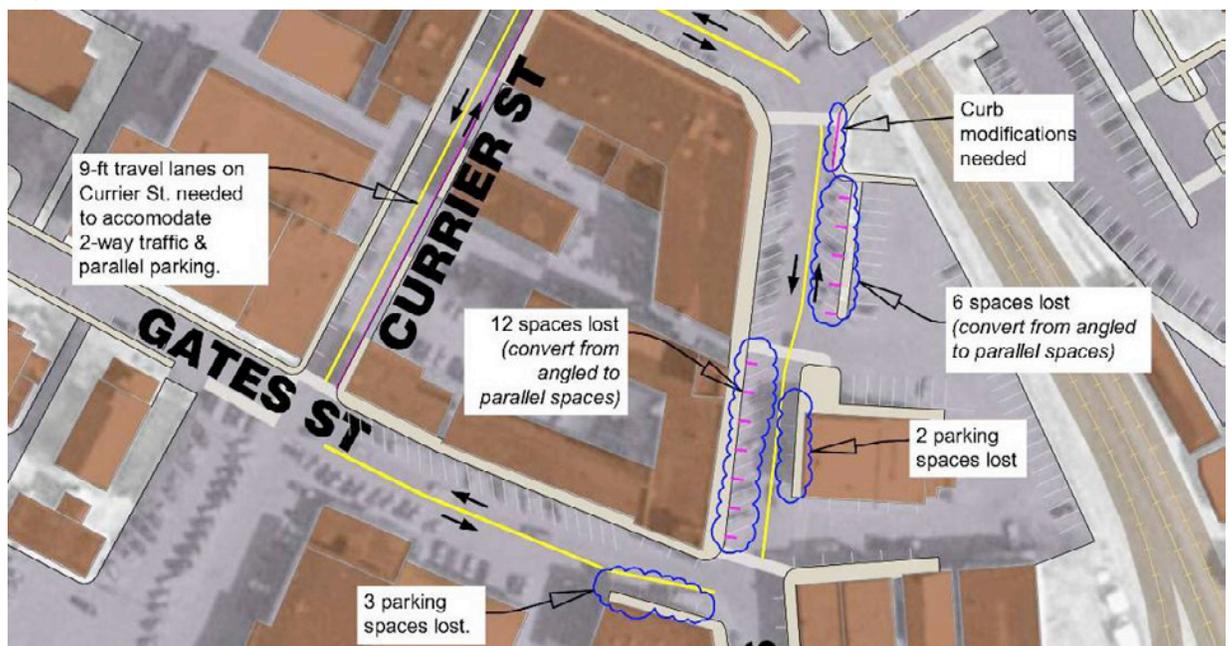
Block	Direction	<i>AM Peak Hour</i>		<i>Midday Peak Hour</i>		<i>PM Peak Hour</i>	
		1-Way	2-Way	1-Way	2-Way	1-Way	2-Way
N. Main Street	Eastbound	92	64	202	131	148	114
	Westbound	-	45	-	57	-	44
S. Main Street	Southbound	125	51	198	117	123	100
	Northbound	-	46	-	88	-	65
Gates Street	Westbound	133	64	190	133	122	87
	Eastbound	-	34	-	77	-	64
Currier Street	Northbound	116	58	184	125	120	88
	Southbound	-	34	-	75	-	60

We examined the current and estimated traffic delays at each of the “corner” intersections identified in Figure 3 under both the current 1-way circulation pattern and a hypothetical 2-way circulation pattern. We found that since the traffic volumes are relatively low throughout the day, intersection delay remained generally low (Level of Service “A” conditions) during all time periods under both circulation patterns.

We then examined the geometric and parking impacts related to a potential conversion to 2-way downtown circulation. Figure 4 below illustrates parking and geometric impacts associated with two-way circulation alternatives. Travel lanes shown are 10-feet wide, with the exception of Currier Street where 9-foot lanes were assumed in order to preserve parallel parking along the street.

As Figure 4 shows, a number of geometric and parking impacts would result from the conversion to two-way circulation. In total, 23 on-street parking spaces (many of them considered “prime” storefront locations) would be lost, and minor curbing adjustments would be needed in certain locations to adequately accommodate the 2-way circulation street widths.

Figure 4: Issues Associated with 2-Way Circulation Pattern



Traffic Circulation Recommendations. Based on the results of our technical assessment, along with input from stakeholders and Town officials, it was determined that the preferred circulation scenario is the **existing one-way downtown pattern** with the incorporation of the following enhancements:

- Construct curbed “bulb-out” delineator at the northeast corner of the South Main Street and Gates Street intersection to more clearly direct northbound traffic from South Main Street onto Gates Street westbound.
- Narrow section of North Main Street between Currier Street and Joe Reed Drive (currently 25 foot travelway width) to 14 foot travelway width with parallel parking lanes maintained on either side. Convert existing width to green belt between sidewalks and new narrowed curb line.
- Incorporate one- or two-way Currier Street extension into design plans for the Miller Auto/Legion Lot revitalization plans.

PEDESTRIAN NETWORK

Figure 5 below shows the existing pedestrian network in and around downtown White River Junction. The existing sidewalks are shown in red and crosswalks are shown in blue. Noted in Figure 5 in yellow are three sections of missing pedestrian connectivity:

- Approximately **115 feet** of sidewalk from the northwest corner of the Main Street/Bridge Street/Currier Street intersection to the Tip Top Building – and associated crosswalks across the Main Street/Bridge Street intersection. Currently, this section of North Main Street is an open curb cut with unrestricted vehicular access and head-in parking for adjacent businesses along the north side of Main Street.
- Approximately **95 feet** of sidewalk along the central landscaped median on South Main Street. Currently, the sidewalk coming across the railroad tracks from Joe Reed Drive terminates at the northern end of this landscaped median (although worn foot paths are often visible through the median).
- Approximately **225 feet** along the south side of Gates Street in front of the old Miller Auto building. This is currently an open curb cut that was previously used for both parking and display of automobiles.

The sidewalks downtown are typically 5-foot wide concrete construction and are generally in fair to good condition. However, there are some sections of sidewalk in poor condition, along with sections of asphalt sidewalk in the downtown area. Figure 6 below shows the material and condition of the sidewalks in and around the downtown core.

Figure 5: Existing Pedestrian Network and Service Gaps

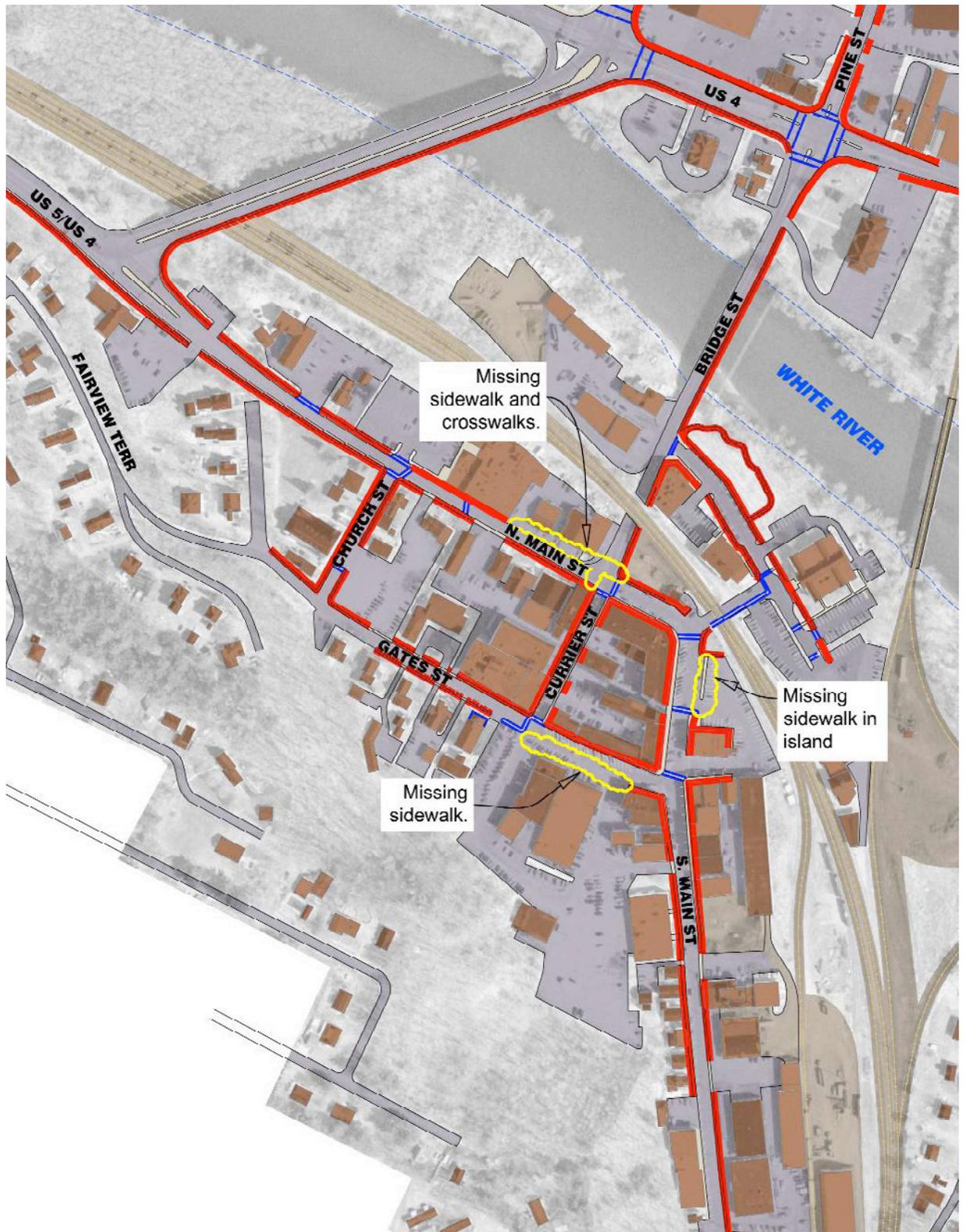
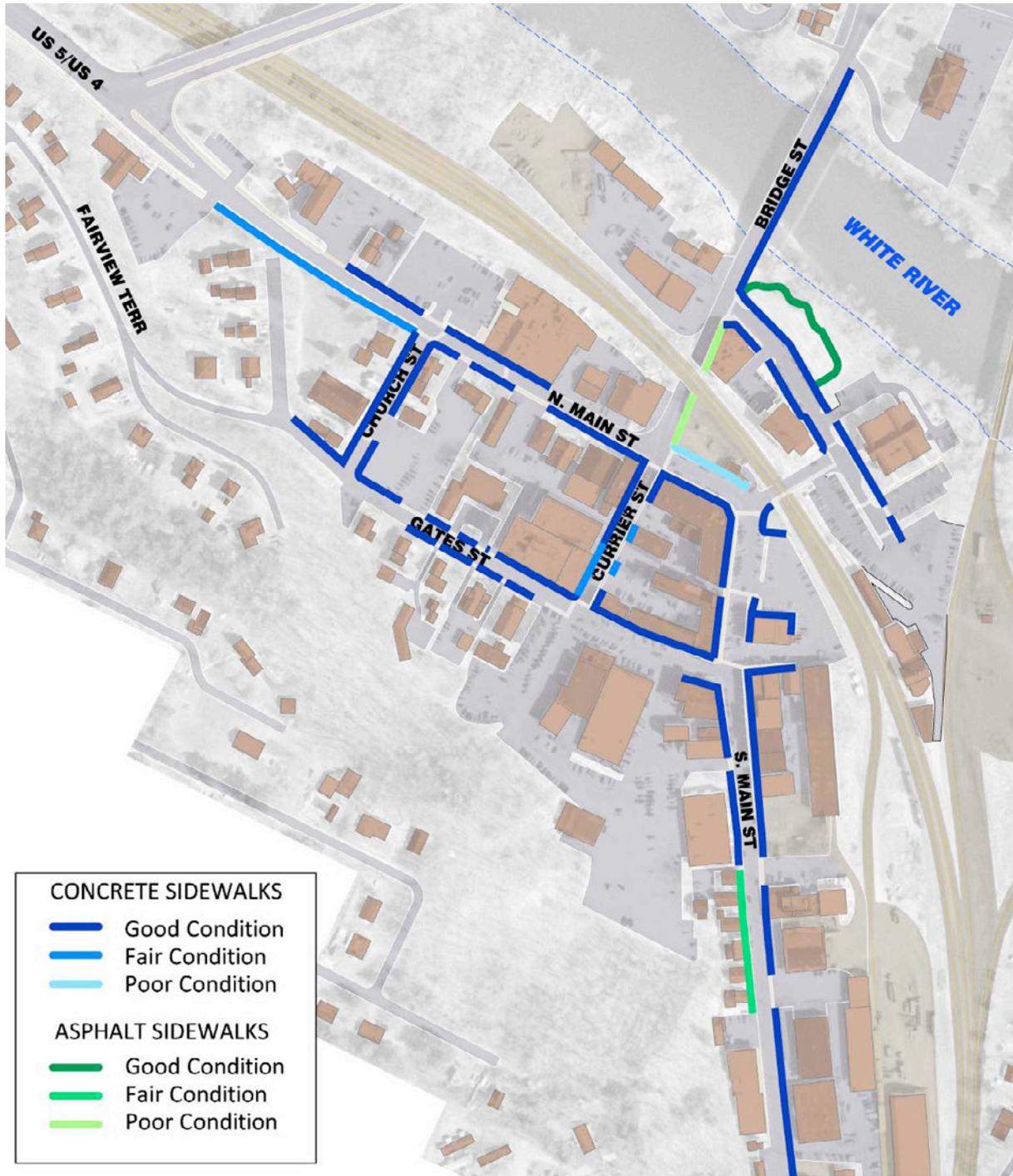


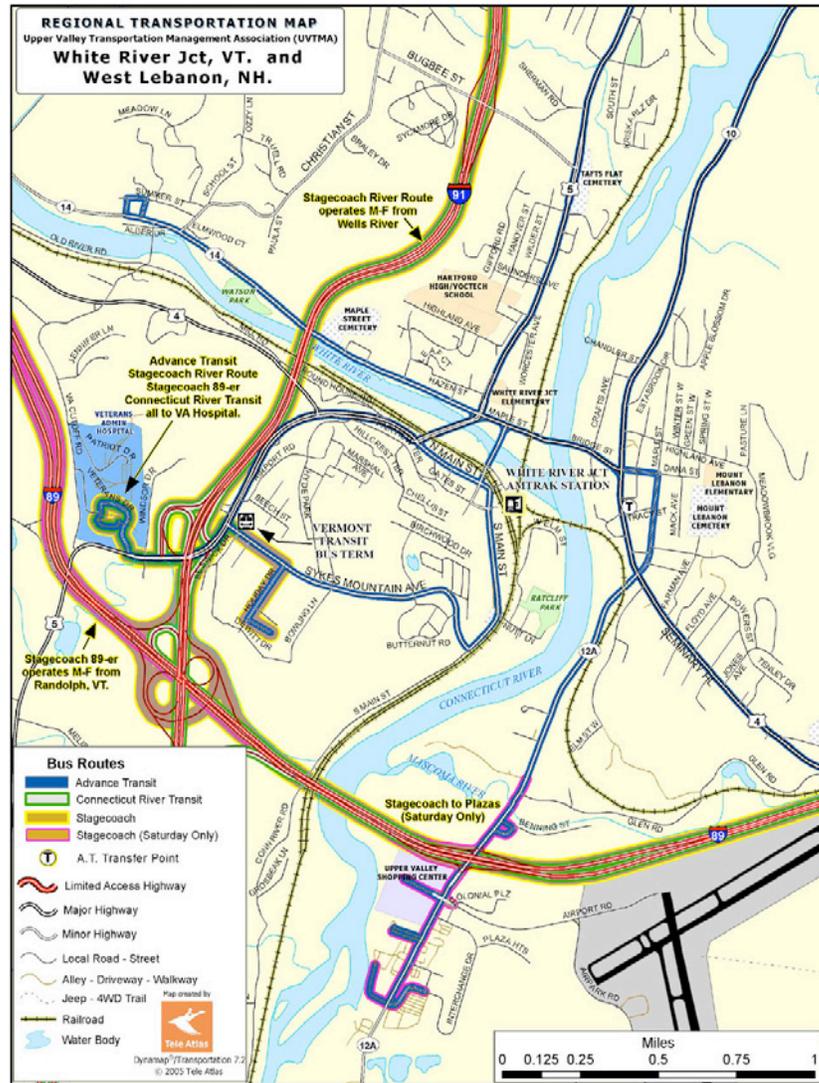
Figure 6: Downtown Sidewalk Condition Assessment



PUBLIC TRANSPORTATION

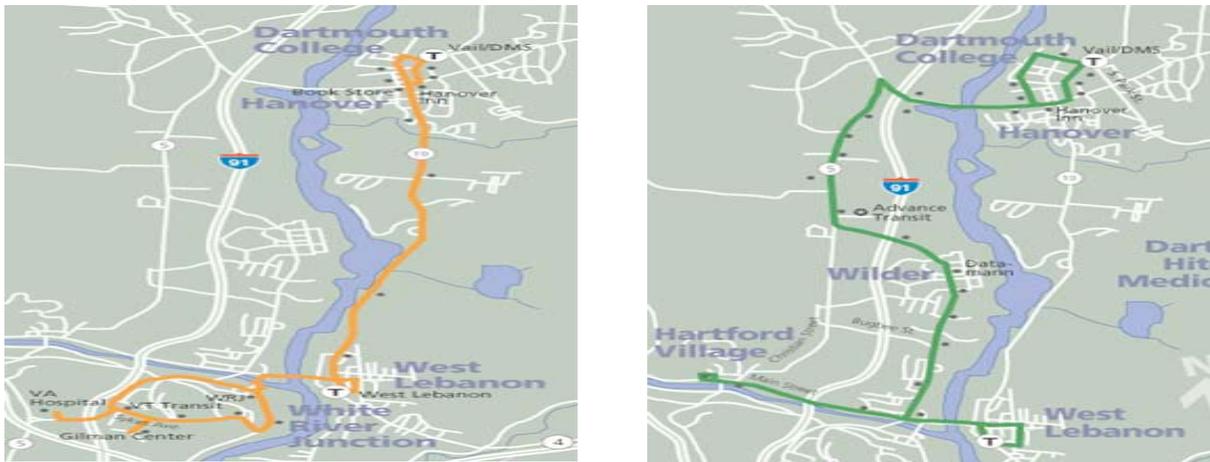
With the confluence of the White and Connecticut Rivers, and later the railroads and interstates, White River Junction has long been a hub for trade, transportation, and commerce for the Upper Valley region. There are currently a number of different public transit providers serving White River Junction. However, at the moment, there is no central junction point or hub for all of these services.

Figure 7: Public Transportation Services around White River Junction



Both the Advance Transit Orange Route and Green Route provide free public transportation service to White River Junction, with connections to major employment, retail, and residential destinations in Lebanon, Norwich, and Hanover. Figure 8 below shows sections of the Orange and Green Routes.

Figure 8: Advance Transit Orange Line and Green Line (portion)



The Orange Route runs on hourly headways and provides service between the VA Hospital, downtown White River Junction, West Lebanon, and Hanover. The main downtown stops are located at the west end of Railroad Row (for trips heading to West Lebanon and Hanover) and in front of the post office on South Main Street (for trips headed towards the VA Hospital).

The Green Route also runs on hourly headways and provides connections between West Lebanon, Hartford Village, Wilder, and Hanover. The closest stop to downtown White River Junction is at the P&C Plaza on US 4.

In addition to the Advance Transit service, there is also daily passenger rail service (Amtrak, train station), regional transit (Connecticut River Transit and Stagecoach Transportation, VA Hospital), and inter-city transit (Vermont Transit/Greyhound, Sykes Avenue) in the immediate area. However, these various public service providers have neither a common hub in White River Junction nor schedules that completely synchronize with each other.

The train station has the potential to serve as a common junction point for all public transportation providers, enabling seamless transfers between buses and trains. However, a number of issues would need to be addressed before a location such as the train station could serve as a main service hub. For example, Vermont Transit/Greyhound requires significant space for staging and storage of their buses. This would potentially take up valuable parking or potentially developable area around the train station should they switch their operations from Sykes Avenue. Further, Connecticut River Transit and Stagecoach Transportation bus routes would require a relatively significant route deviation (approximately 5-7 minutes) to service a downtown White River Junction transportation hub.

Despite the potential difficulties in co-locating and synchronizing public transportation providers in downtown White River Junction, the current uncertainty in fuel prices and other recent trends away from the personal automobile indicate that every effort should be made to help facilitate more efficient passenger transportation into and through downtown White River Junction now and into the future.

SUMMARY OF STREET AND SIDEWALK RECOMMENDATIONS

Based on our technical analysis and input from Town officials and area stakeholders, the following street and sidewalk recommendations have been developed:

North Main Street (Bridge Street to Currier Street):

- Relocate sidewalk and street lights on south side of Main Street to provide on-street parking for adjacent uses.
- Construct new sidewalk and on-street parking on north side of North Main Street between Bridge Street and Tip Top building to connect existing sidewalk in front of the Tip Top building to the sidewalks along Bridge Street.
- Construct curbed bump-out at northwest corner of Main Street and Bridge Street intersection to narrow street width, slow traffic speeds, and shorten the pedestrian crossing distance.
- Stripe new crosswalks across the northern and western approaches to the Main Street/Bridge Street intersection to connect existing and proposed sidewalks.

North Main Street (Currier Street to Joe Reed Drive):

- Narrow travel lane to 14 feet (one-way) and construct landscaped strip between sidewalk and new curb line. This narrowing would help to minimize overall paved area and slow traffic speeds while providing space for additional landscaping treatments along this block.
- Stripe a new crosswalk across the Joe Reed Drive approach to Main Street to facilitate pedestrian crossings between two existing sidewalks.

Railroad Row / Courthouse Lot:

- Construct turn-around at the end of Railroad Row to facilitate vehicle turns as well as drop-offs and pick-ups from the train station.
- Reconfigure parking and traffic circulation in Courthouse lot to better define the parking spaces, add extra parking spaces, improve the current traffic circulation pattern, improve stormwater management, and provide additional area for landscaping.
- Construct new concrete sidewalk along Joe Reed Drive between Main Street and Railroad Row to replace the current “striped” sidewalk on this block.

Gates Park & Post Office Lot:

- Expand the existing Gates Park to serve as a downtown focal point and enhanced green space area.
- Reconfigure parking and circulation around old Post Office building to maximize parking capacity and provide a one way clock-wise traffic circulation pattern around the old Post Office building.
- Construct a new transit shelter adjacent to the northeast corner of the old Post Office building to be served by Advance Transit’s orange route.

Gates Street (east of South Main Street):

- Complete a full depth reconstruction of Gates Street (associated with utility upgrades) to replace roadway base and surface.
- Construct new sidewalks on north and south side of Gates Street to enhance pedestrian connectivity.
- Construct a new curbed bump-out at the northeast corner of the South Main Street / Gates Street intersection to more clearly divert northbound Main Street traffic onto westbound Gates Street.

Currier Street (Gates Street to North Main Street):

- Replace sidewalk in front of Classy Cuts to make grades handicap accessible.

Miller Auto Parcel / Legion Lot:

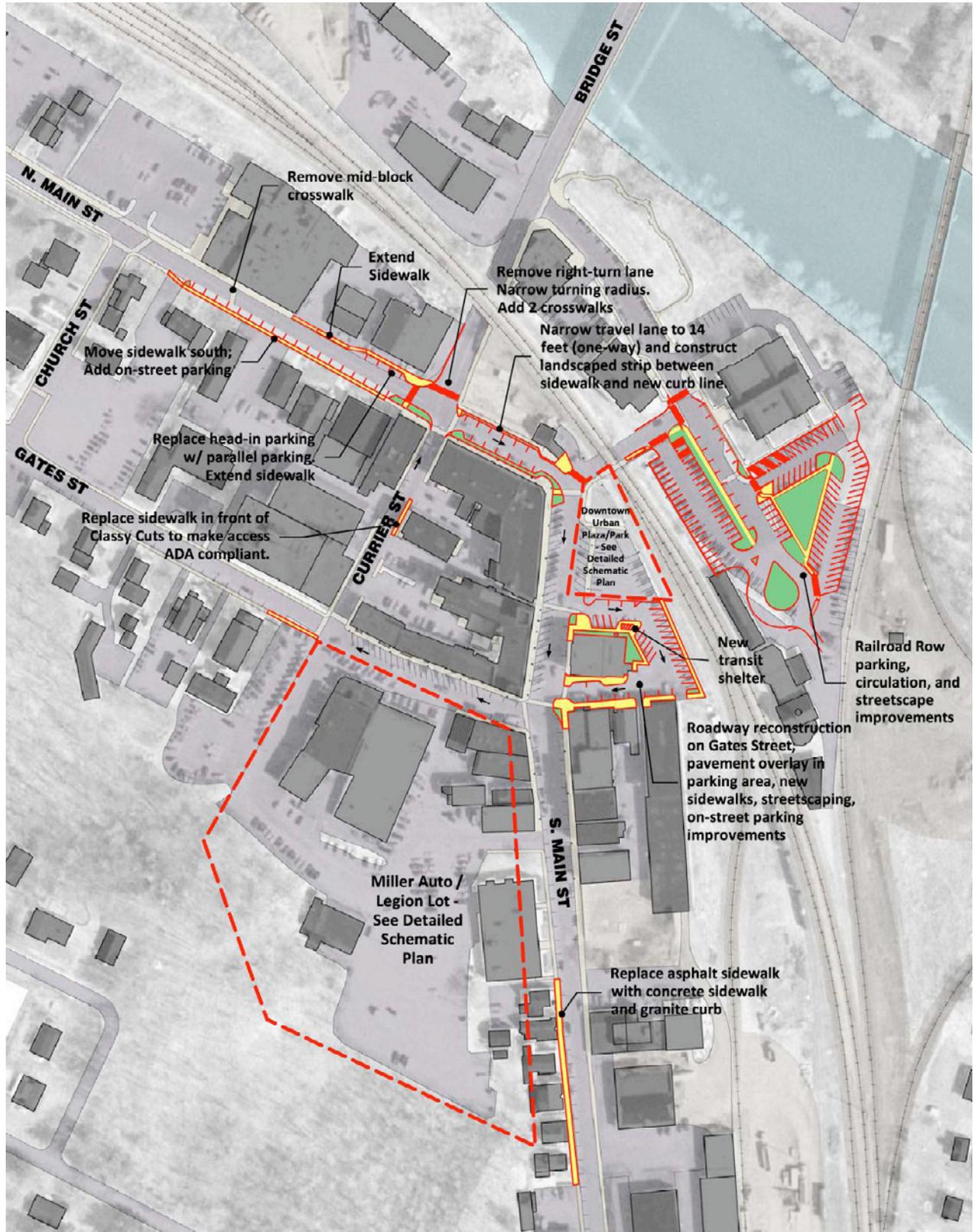
- Reconstruct site to include new Northern Stage facility, expanded parking, Currier Street extension, and new sidewalks.

South Main Street (Gates Street to Nutt Lane):

- Replace section of deteriorating asphalt sidewalk south of the American Legion building with new concrete sidewalk and granite curb.

The location of these improvements is shown in Figure 9.

Figure 9: Summary of Street and Sidewalk Recommendations

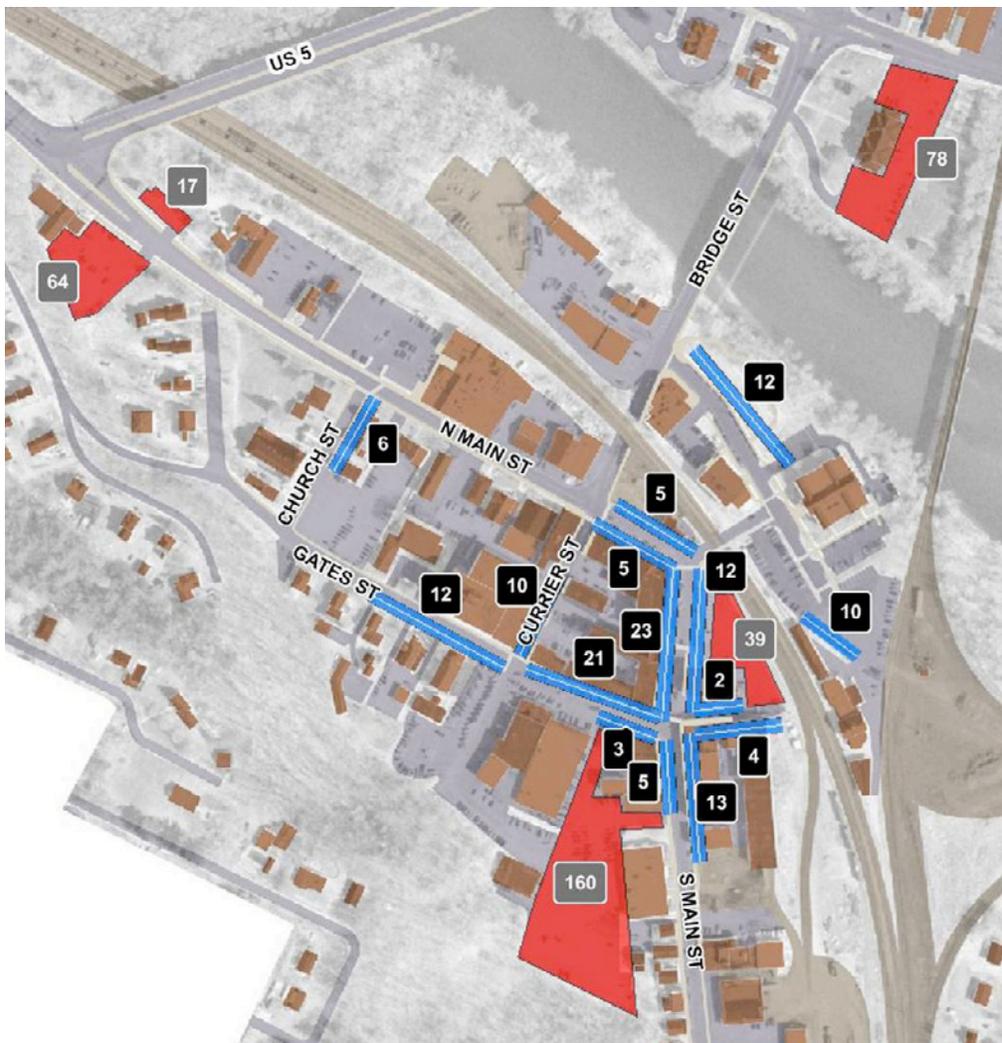


Parking Assessment

The Town of Hartford staff has been conducting parking utilization counts in White River Junction twice a year since 2005. This wealth of data collection has provided a number of important insights into the parking supply and demand situation in downtown White River Junction.

In terms of public parking inventory, there are 358 on-street spaces and 142 off-street spaces in downtown White River Junction (including the Senior Center and Town Office lots). Figure 10 shows the location and tally of on- and off-street parking spaces.

Figure 10: White River Junction Parking Inventory



Based on the most recent parking utilization survey, the average on-street parking occupancy (public spaces) was 51%, while the average off-street public parking occupancy was 24%. Considered together the average occupancy for all downtown public parking was slightly more than 34%, with the highest rates seen on Railroad Row and sections of North and South Main Street.

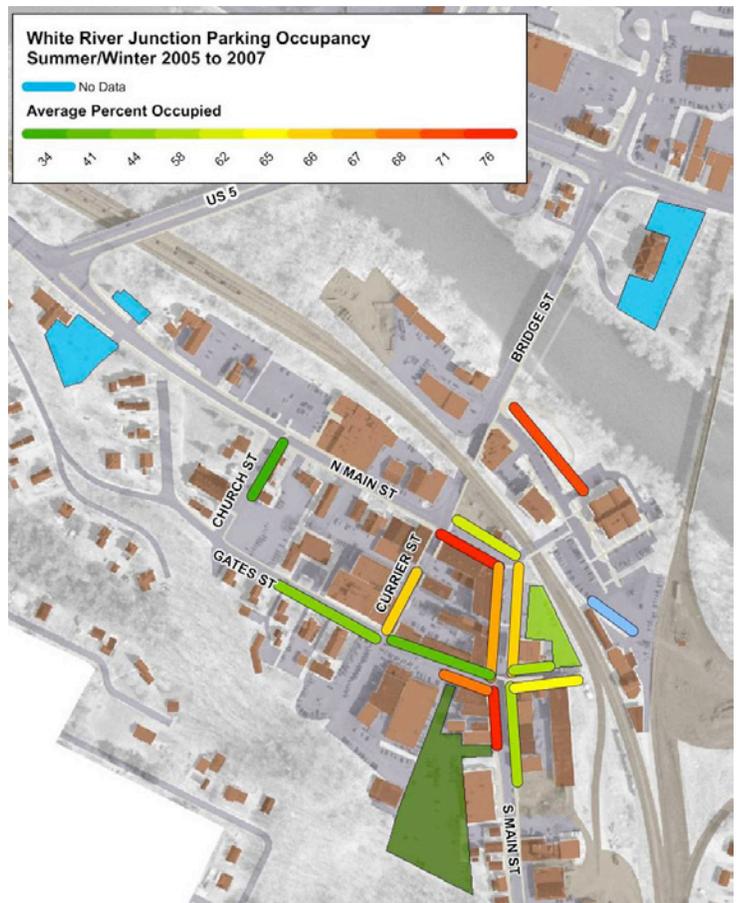
Table 1 below shows average parking occupancy throughout the day from the most recent parking inventory. The table shows that overall parking demand peaks during the mid-day at 40% and that on-street spaces are much more utilized (51%) than the off-street municipal lots (24%).

Table 1: Average Parking Occupancy throughout the Day (Summer 2007)

Time Period	On-Street Parking		Municipal Lots		Total	
	Occupied Spaces	Percent Occupied	Occupied Spaces	Percent Occupied	Occupied Spaces	Percent Occupied
Mid-Morning	74	56%	56	28%	130	39%
Mid-Day	79	60%	52	26%	131	40%
Mid-Afternoon	71	54%	46	23%	117	36%
Evening	43	32%	34	17%	77	23%
Total (combined)	67	51%	47	24%	114	34%

Figure 11 shows the average parking occupancy rates (public parking only) throughout downtown White River Junction in the period 2005 to 2007. The figure shows relatively low parking utilization rates throughout downtown except for specific on-street sections of Railroad Row and Main Street.

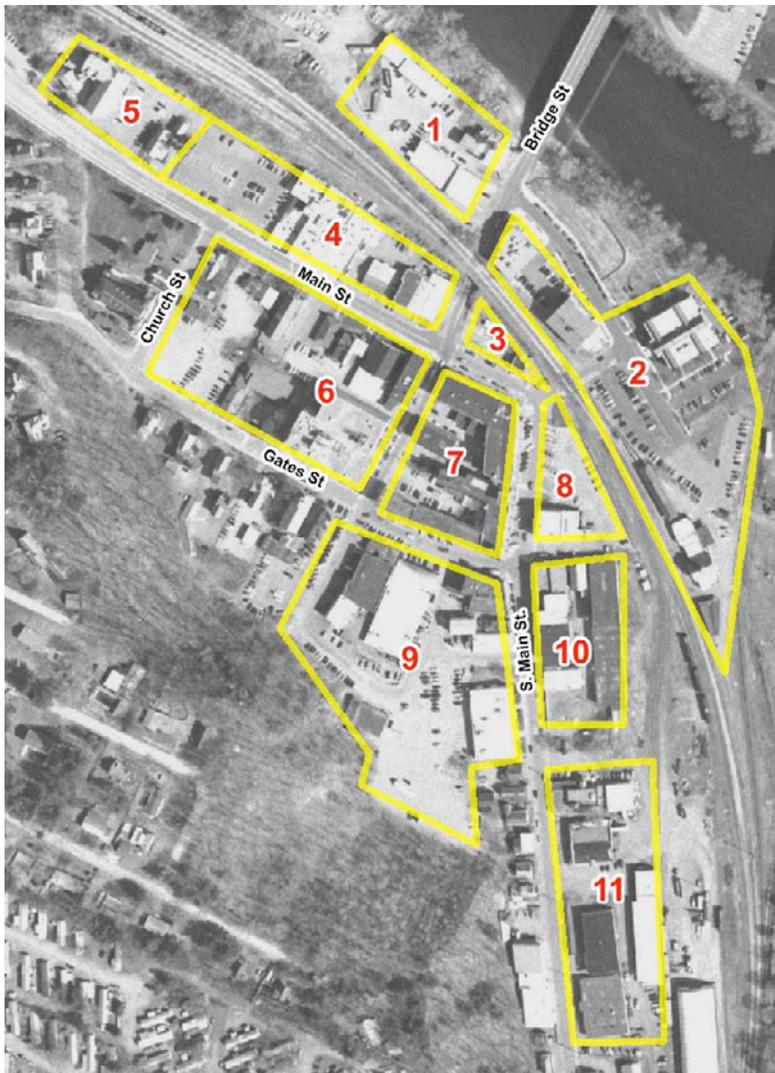
Figure 11: Average Parking Occupancy (2005-2007)



ASSESSMENT OF PARKING SUPPLY & DEMAND

The previous section summarized the current utilization of public parking in the downtown area. To develop a better understanding of the actual demand for downtown parking, and how that relates to the current supply of parking, we conducted a block-by-block parking supply and demand assessment. The blocks used in this assessment are shown below in Figure 12. Current land uses, and their corresponding parking demands were quantified for each block. This demand was then compared with the parking supply in that block to arrive at an overall assessment of parking supply in the downtown area.

Figure 12: Parking Block Boundaries



Current Parking Demand Assessment. Figure 13 below shows current land use (residential, non-residential, and vacant) for each of the 11 downtown blocks shown in Figure 12 above, as well as the estimated parking demand based on standard parking generation rates for different land uses (“full”),

the parking demand calibrated based on specific uses and local knowledge (“calibrated”), and the number of parking spaces required per the 2007 Zoning Ordinance (“zoning”).

Figure 13: Land Use and Parking Demand by Block

Block	Residential	Non-Residential	Vacant	Parking Demand (full)	Parking Demand (calibrated)	Required Parking (per Zoning)
1	2,200	10,400	0	26	20	42
2	6,500	60,575	0	129	116	253
3	0	1,150	0	6	5	4
4	7,300	56,400	0	157	90	234
5	0	19,000	0	45	36	76
6	26,400	59,600	0	175	98	189
7	3,200	101,815	0	257	113	296
8	0	4,800	4,800	12	12	19
9	13,100	21,380	33,500	93	45	83
10	16,200	47,100	2,170	91	70	125
11	0	35,420	0	72	45	113
Total:	74,900	417,640	40,470	1,063	650	1,434

The table shows that the total number of parking spaces required by zoning is significantly higher than the calibrated demand quantified for the downtown. This discrepancy is primarily due to: 1) zoning requirements exceeding actual demand for downtown uses, and 2) the ability for “compatible” land uses to utilize the same parking spaces over the course of a day (e.g. office uses need parking spaces during the day, while Northern Stage primarily uses the spaces during the evening).

Existing Parking Supply, Demand, and Surplus/Deficit by Block.

Figure 14 below shows the existing parking supply by block, along with the calculated parking surplus or deficit by block based on the calibrated parking demand and on the parking required by zoning (from Figure 13 above). Comparing the calibrated parking demand with current parking supply, we find that there is excess parking capacity in all blocks except for Block #7 (Briggs/Coolidge Block) and Block #10 (South Main Block). Comparing the parking required per zoning with existing supply, we find that there is an overall parking deficit for nearly all blocks in the downtown area.

Figure 14: Parking Supply vs. Demand

Block	Parking Supply				Total	Existing Parking Demand (calibrated)		Parking Required per Zoning	
	Public		Private			Parking Demand	Surplus/Deficit	Zoning Requirement	Surplus/Deficit
	On-Street	Off-Street	On-Street	Off-Street					
1	0	0	0	50	50	20	+30	42	+8
2	12	10	5	135	162	116	+46	253	-91
3	5	0	0	0	5	5	+0	4	+1
4	0	0	0	99	99	90	+9	234	-135
5	0	17	0	45	62	36	+26	76	-14
6	28	0	0	116	144	98	+46	189	-45
7	49	0	0	45	94	113	-19	296	-202
8	14	39	0	0	53	12	+41	19	+34
9	23	160	0	72	255	45	+210	83	+172
10	17	0	0	0	17	70	-53	125	-108
11	0	0	0	50	50	45	+5	113	-63
TOTAL	148	226	5	612	991	650	+341	1434	-443

Peripheral Lots	
Municipal Building	78
Bugbee Center	64

Future Parking Demand. Based on our assessment of parking demand presented above, combined with the results of the ongoing parking utilization surveys, it appears that there is sufficient parking capacity in the downtown core to support current uses on a typical day².

Any future downtown development, or redevelopment, will be subject to municipal zoning requirements which require the provision of adequate parking for the new use. Therefore, one can assume that any additional development downtown will need to either “claim” some of the existing surplus parking, and/or create additional parking capacity to handle their projected demand, per Hartford’s Zoning Regulations.

To encourage future downtown development, the Town may choose to expand the current level of parking capacity, particularly on town-owned land. Opportunities for parking expansion exist in the courthouse/train station lot, the “wye” railroad area, and the American Legion lot.

PARKING METER ASSESSMENT

A common source of revenue for downtown districts is through the collection of parking fees (both metered and long-term permits) in public parking spaces. Although the revenue collected through the assessment of parking fees can prove helpful in financing downtown improvements, there are important factors that should be considered before initiating a downtown parking fee program.

Some factors for consideration include the following:

- How will the parking fee program affect downtown merchants and their customer base (i.e. will it lead to customers shopping elsewhere where parking fees are not collected)?
- Once parking meter maintenance and enforcement fees are considered will the parking fee program still provide a source of revenue for the downtown?
- Which sections of downtown should be metered?
- How should the parking fees and durations be set-up? Should they vary for different locations around the downtown? Should they vary over the course of a day?

There were parking meters in downtown White River Junction for a time. These meters were removed primarily to support downtown businesses and help them to compete with the larger shopping centers across the river in West Lebanon that provide ample, free parking.

Therefore, before reinitiating a downtown parking fee program, the following assessment was conducted to help address the important factors identified above. This assessment identifies the potential revenues that

2. During special events (i.e. large jury trial, daytime Northern Stage event) the current parking capacity may be exceeded. Additionally, the “available” parking may not be located immediately adjacent to the particular land use.

could be generated through a downtown parking fee program by examining public parking occupancy by block, a basic parking fee structure, and ongoing costs associated with the program.

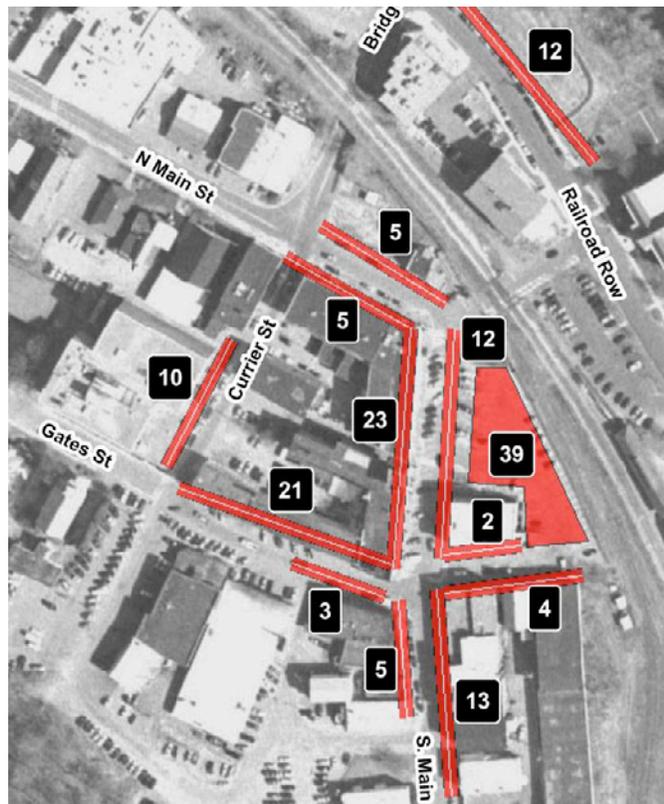
Parking Occupancy by Block. Figure 15 below shows average parking occupancy per block based on the most recent survey of downtown public parking utilization. Our assessment did not include the Legion Lot, as it currently has a low utilization rate and could provide a free parking alternative for employees and customers looking for a free lot and serve to free up space on the higher demand metered spaces.

Figure 15: Public Parking Utilization by Block

Street	Side	Block	Available Spaces	Occupied Spaces (February 2008)				Average Occupancy
				AM 10:00-11:00	Noon 12:00-1:00	Afternoon 2:45-3:45	Evening 6:15-9:00	
Railroad Row	North	Gateway Park	11	10.8	10.8	10.4	0	97%
Gates	North	Old Post Office	2	2.0	1.6	1.6	1.8	87%
Gates	South	Vermont Salvage	4	3.8	3.8	2.8	2.6	87%
South Main	West	Barber Shop	5	3.6	4.8	4	3.8	83%
South Main	West	Hotel Coolidge	23	15.6	19	15	18	72%
Gates	South	Vermont	3	1.6	2.2	2.2	2.8	67%
South Main	East	Colodny Building	13	7.8	9.8	7.8	8.2	65%
Currier Street	West	Verizon	10	6.6	7	5.4	3.2	63%
North Main	South	Revolutions	5	3.0	3.6	2.6	4.2	61%
South Main	East	Old Post Office	12	6.6	9.2	6.2	10	61%
Briggs Parking Lot			39	22.8	23.2	23.4	27.2	59%
Gates	North	Lampscapes	21	8.8	10.4	10.2	11	47%
North Main	North	Polka Dot Diner	5	1.8	1.6	2.8	3.8	41%

Figure 16 below shows the location and number of potential parking meters throughout the downtown core.

Figure 16: Potential Parking Meter Locations (# spaces)



Potential Parking Revenue Generation Estimate. Based on the parking occupancy and the number of potential parking meters per block, Figure 17 below shows the estimated revenue generated by block between 8 AM and 6 PM. The revenue figures assume a flat \$0.50/hour rate for all locations and that parking demand is unaffected by the implementation of the metering program.³

Figure 17: Potential Parking Revenue Generation by Block (assumes \$0.50 per hour rate)

Street	Side	Block	Available Spaces	AM 8:00-11:00	Mid-day 11:00-2:00	Afternoon 2:00-5:00	Total
Railroad Row	North	Gateway Park	11	\$16	\$16	\$16	\$48
Gates	North	Old Post Office	2	\$3	\$2	\$2	\$8
Gates	South	Vermont Salvage	4	\$6	\$6	\$4	\$16
South Main	West	Barber Shop	5	\$5	\$7	\$6	\$19
South Main	West	Hotel Coolidge	23	\$23	\$29	\$23	\$74
Gates	South	Vermont	3	\$2	\$3	\$3	\$9
South Main	East	Colodny Building	13	\$12	\$15	\$12	\$38
Currier Street	West	Verizon	10	\$10	\$11	\$8	\$29
North Main	South	Revolutions	5	\$5	\$5	\$4	\$14
South Main	East	Old Post Office	12	\$10	\$14	\$9	\$33
Briggs Parking Lot			39	\$34	\$35	\$35	\$104
Gates	North	Lampscapes	21	\$13	\$16	\$15	\$44
North Main	North	Polka Dot Diner	5	\$3	\$2	\$4	\$9
Total (per day):							\$444
Total (per month):							\$8,886
Total (annual):							\$106,632

Figure 18 below shows initial and annualized costs associated with implementing parking meters downtown. Initial costs considered include the costs for purchasing and installing the parking meters⁴ as well as the costs associated with signing and striping for the new meters. Annual costs include routine maintenance of the parking meters and signs as well as compensation for a parking violation officer.

Figure 18: Estimated Parking Fee Program Costs

Initial Costs		
Parking Meters - Initial Cost	\$61,200	\$400 per meter installed
Signing & Striping	\$4,050	25 new signs
Annualized Costs		
Parking Meters - Maintenance	\$3,060	5% of purchase price
Parking Violation Officer	\$50,000	

Based on the estimated revenue and costs associated with the parking fee program, Figure 19 shows the potential net revenue that could be generated through the parking fee program with a \$0.25/hour rate, a

Figure 19: Potential Net Parking Revenue Generation (various hourly parking rates)

Net Revenue*	Meter Rate		
	\$0.25/hr	\$0.50/hr	\$1.00/hr
Year 1	(\$61,934)	(\$8,618)	\$98,014
Year 2+	\$256	\$53,572	\$160,204

* Does not account for revenue generated by parking tickets

3. This assumption may not necessarily hold true. For example, the high demand on Railroad Row would likely decrease after implementation of the parking meters, since the majority of current parked vehicles are associated with adjacent office, not retail, uses.

4. For cost assessment purposes, we have assumed traditional, stand-alone parking meters.

\$0.50/hour rate, and a \$1.00/hour rate. The results show that a \$0.25 hourly rate would essentially break even after the initial costs have been covered in year one. Doubling to a \$0.50 per hour rate would result in a slight deficit the first year and then provide approximately \$50,000 in revenue in year two and beyond. The \$1.00/hour rate provides positive revenue beginning the first year. Note that these net revenue assumptions do not account for the potential additional revenue generated through parking tickets.

Parking Meter Recommendations. The previous section provided estimated annual revenues that could be obtained through the installation of 153 parking meters on the six downtown blocks with the highest parking utilization rates. This analysis showed that both \$0.50 and \$1.00 hourly parking rates would generate positive revenue after initial installation costs are accounted for. However, there are some variables that should be refined and discussed prior to implementation. For example, will there be any backlash from residents or community members from the installation of the parking meters on their block? What is the optimal meter rate that should be charged? Does the revenue from the parking program go into the Town's general fund or does it get focused on downtown infrastructure improvements?

The most significant cost associated with the parking meter program (after the meter installation) is the compensation for the parking enforcement officer. Depending on the frequency that the Town chooses to monitor and enforce parking violations, and the number of meters installed, it may be an option to utilize current town staff for parking enforcement, thereby increasing net revenue from the parking meter system.

Given the scale of improvements identified for downtown White River Junction, and the relatively small amount of funding available to implement these improvements, we recommend that the Town seriously consider implementing a downtown parking meter program.

Streetscape, Landscape & Urban Design Assessment

Summary of Findings

Based on Public Workshop, Interviews and Observations.

- Parts of the village (such as the stretch beyond the intersection of Main and Currier) seem outside of the locus of energy and activity and need to be “brought in as part of the whole”
- Rough edges exist in many locations throughout the downtown- vacant lots, alleyways, fencelines, dumpster and service areas.
- Veteran’s Park adds important green and gathering space, but the downtown lacks a public plaza or central green space.
- The Legion Parking Lot remains underutilized and the section of downtown it is in needs to be better connected with the rest of the village.
- There are concerns about the level of lighting and safety at the Legion Parking Lot and sections of South Main Street.
- Empty storefronts, condition of facades and some public areas remain as an ongoing concern.
- Business people and others representing downtown organizations are “bullish” on White River, recognize its potential but also recognize challenges.
- Residents and individuals with downtown involvement recognize that the character of White River is unique, a bit “edgy” and “funky”, but most agree on the potential.
- There is a diversity of individuals and organizations which comprise the community of White River Junction - together these individuals and organizations, through their leadership, vision and commitment help to create a rich, unique and potentially engaging and vital downtown.
- There is an identified need for more restaurant/ cafe type spaces, particularly in support of evening events - there needs to be more nightlife.
- The downtown has a rich history and more can be done to capitalize on this, including better signing, more benches.
- There are divisions between parts of town due to river, railroad, topography.
- Overhead utilities predominate in some locations.
- ‘Dead spaces’ exist around railroad tracks, parts of downtown.
- There are distinct economic challenges associated with the restoration and/or reuse of old buildings - often the cost of redevelopment is not recovered by the potential return on the investment.
- Excessive asphalt paving predominates the downtown - there is a need for additional pervious surfaces/ street trees
- The character of the downtown could benefit from improved urban design details - sign posts, kiosk and bus shelter design, hanging flower baskets on lamp posts, enhanced paving, etc.
- There is a need for improved wayfinding and continuous pedestrian facilities to enhance the visitor experience.

Existing Conditions: Buildings & Paving



Existing Conditions: Downtown District Detail

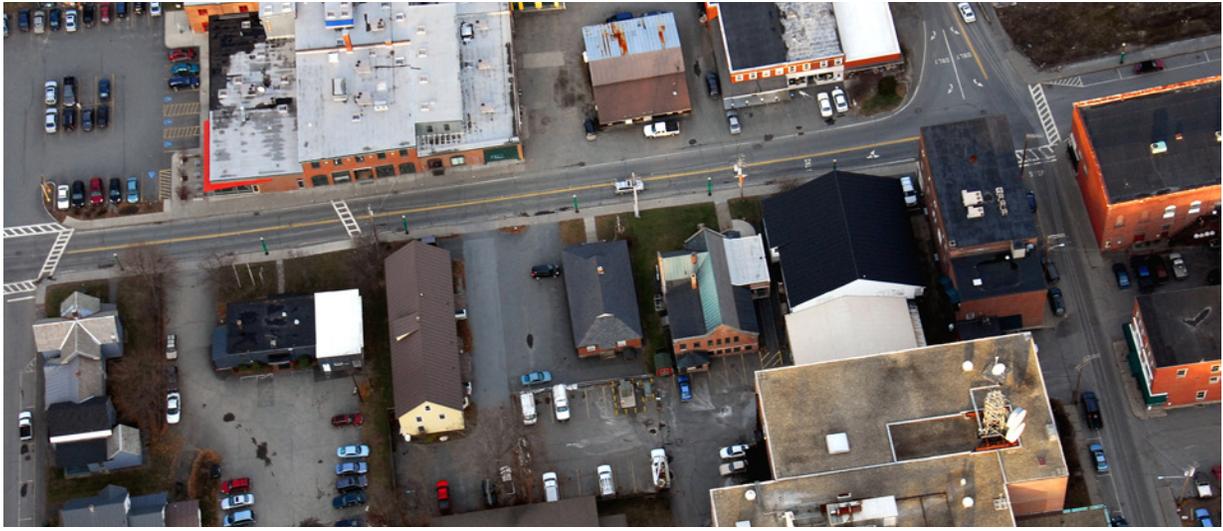


Existing Conditions: Aerial Photos



Photos by Aerial Design

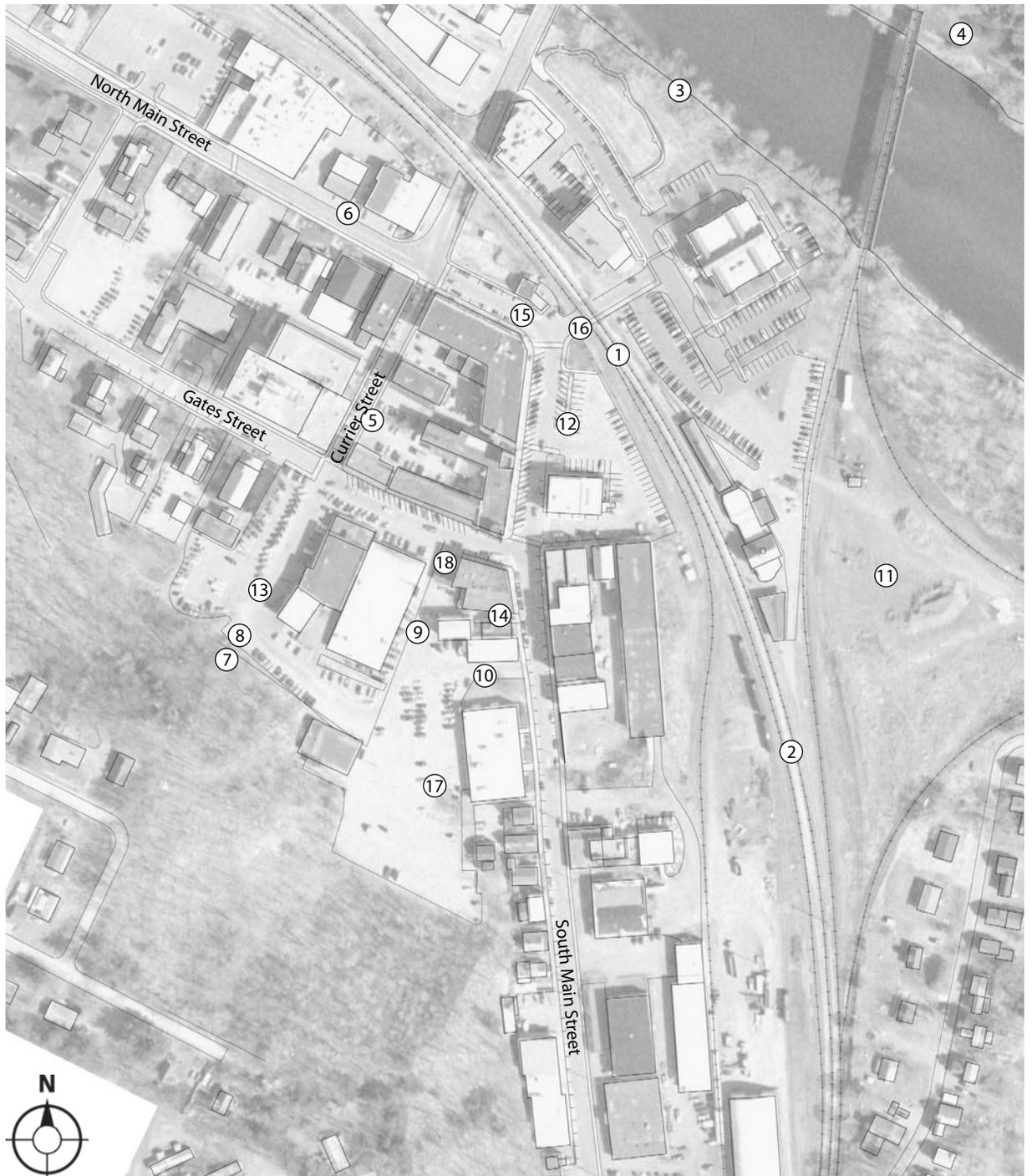
Existing Conditions: Aerial Photos



Photos by Aerial Design

Downtown Issues

CONNECTIONS & SPACES



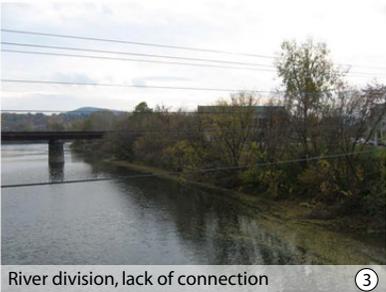
Divisions/ Inadequate Connections



Railroad division ①



Railroad division ②



River division, lack of connection ③



River division, lack of connection ④



Discontinuous sidewalk ⑤



Discontinuous sidewalk ⑥



Neighborhood division ⑦



Neighborhood division ⑧



Legion parking connection ⑨



Legion parking connection ⑩

Underutilized Spaces



Dead spaces 11



Lack of central plaza / green space 12



Expanses of asphalt paving 13



Alleyways 14

Wayfinding Confusion



One-way streets 15



Confusing / inadequate signage 16

Lighting Deficiencies



Inadequate nighttime illumination 17



Inadequate nighttime illumination 18

AESTHETICS (STREETSCAPE/URBAN DESIGN DETAILS)



Streetscape/ Urban Design Details



Outline of Opportunities for the Downtown

- The Legion Parking Lot site has great potential as a mixed use site with a parking structure, “wraparound” commercial space and public connections.
- Infill sites and alleyways hold promise for enriching the downtown fabric with new architecture, new life and businesses.
- Great potential exists for extending, enhancing and further developing the riverfront for visitor and resident use.
- There remains a need for a downtown post office and other service type businesses such as a grocery store.
- The potential exists for reconnecting the neighborhood pathways up on the hill with the downtown - this will help unify the greater Hartford and support the downtown.
- Enhancing and promoting the downtown as a transportation hub with the railroad and Advance Transit is another distinct option for the future.
- Public- private partnerships hold promise for future development initiatives, and with new development infrastructure can be upgraded.
- The potential growth for downtown tourism, based on elements already in place, remains strong but requires continued marketing and creativity to link discrete components into a whole greater than the sum of its parts.
- Integrate walk/bike/park/ride (bus/train)
- An opportunity exists to connect the downtown on both sides of the river, visually and functionally.
- Connect all reaches of downtown with public spaces to support cultural and economic vitality.

Opportunities for Economic Development

- Continue to promote and plan with the Byway and state tourism agency.
- Build on programming and events for public spaces - interior and exterior.
- Explore the organization and make-up for potential public private partnerships to redevelop certain properties and for marketing/branding initiatives.
- Develop the branding and marketing components; consider a downtown “Prospectus” which will promote the downtown from several perspectives- new business/ new organizations.

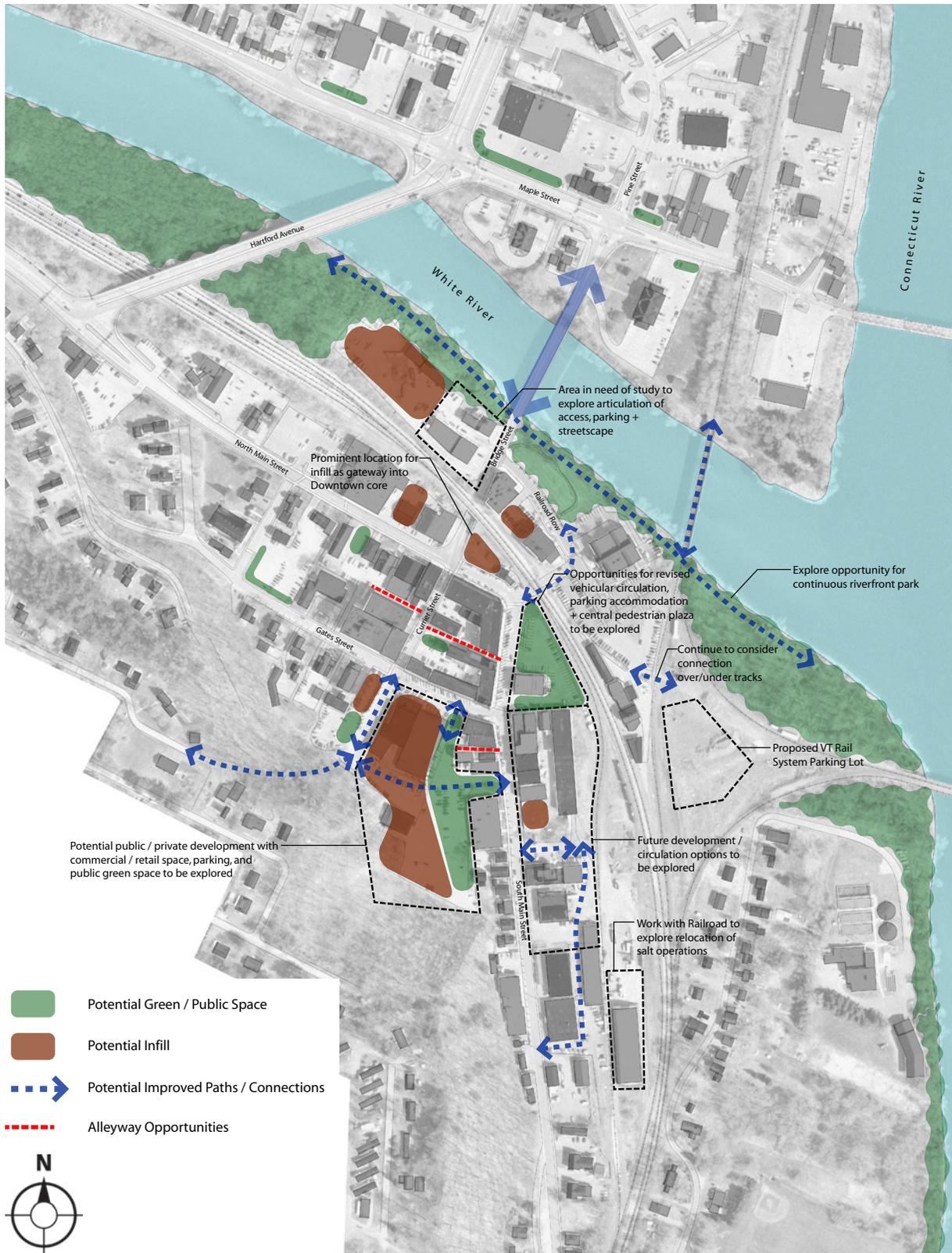
Conceptual Opportunities Plan

The Conceptual Opportunities Plan represents an exploration of potential infill and green /public spaces and corridors.

Infill. Channeling development into the core downtown makes the most sense not only from a functional and economic perspective, but also from an environmental perspective. A thriving and dynamic urban center depends on a certain critical mass of downtown housing (at a range of affordability), retail, restaurant, and entertainment opportunities (for visitors and residents alike), infrastructure to support businesses and residences (e.g. adequate parking), and a strong network of pedestrian-oriented public / civic spaces. Ideally there is also a range of employment options in the downtown or nearby to reduce reliance on automobiles and create an economic core that is not wholly dependent on tourism. LandWorks went about exploring conceptual infill opportunities both by interviewing local developers with prospective development plans and by studying the urban fabric to determine locations that could benefit from higher-density new construction.

Green/Public Spaces. Like many of the potential infill areas shown on the plan, the areas of potential green /public space are intended to be conceptual in nature. One of White River Junction's most glaring aesthetic weaknesses is its excess of asphalt paving, the extent of which can be seen in the Existing Conditions: Buildings and Paving Plan, as well as in the aerial photographs. Large expanses of asphalt paving predominate certain areas, while in many cases only a portion of the paving is actually needed to support vehicular circulation and parking. The Parking Analysis performed for this assessment also tells us that there is more than adequate parking to support current use. From an environmental perspective, the excessive amount of paving also results in high volumes of stormwater runoff, which contributes to degraded water quality in the adjacent rivers. A number of the green areas shown on the Conceptual Opportunities Plan represent potential places to replace asphalt paving with permeable landscaping (e.g. parking lot buffers). Some of the green areas, however, could represent potential pedestrian corridors and plazas with attractive paving, street furniture, and street trees. The idea of creating pedestrian-oriented public spaces in the downtown is more than aesthetic. Successful urban outdoor spaces can significantly contribute to a town or city's cultural and economic vitality in a number of ways, including supporting outdoor events such as music performances, farmers and artist markets, and special seasonal events. Something as simple as sitting on a comfortable bench while sipping coffee and people-watching is another type of opportunity that attracts many people to downtown areas.

Conceptual Opportunities Plan

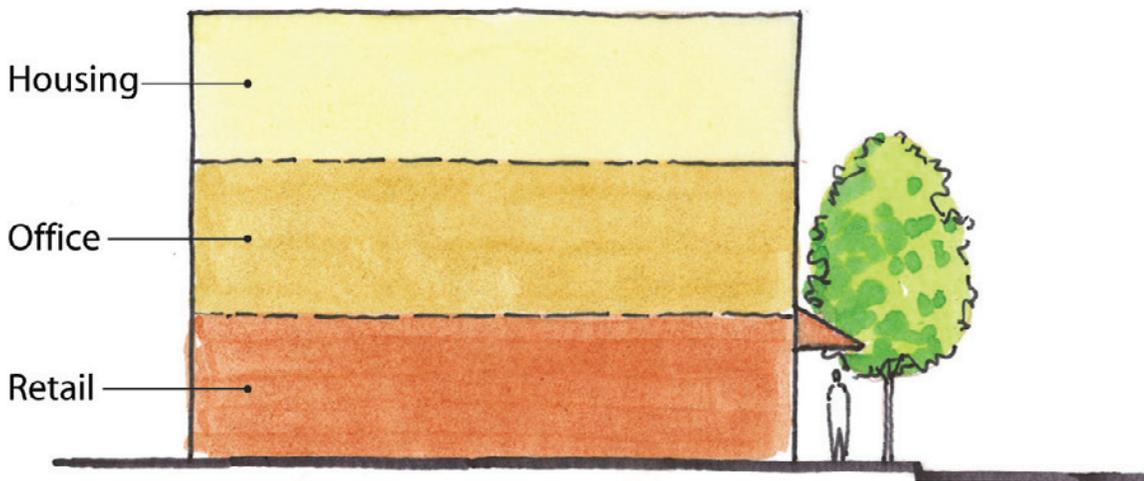


Design Principles &
Elements for the Overall
Downtown

Design Principles & Elements

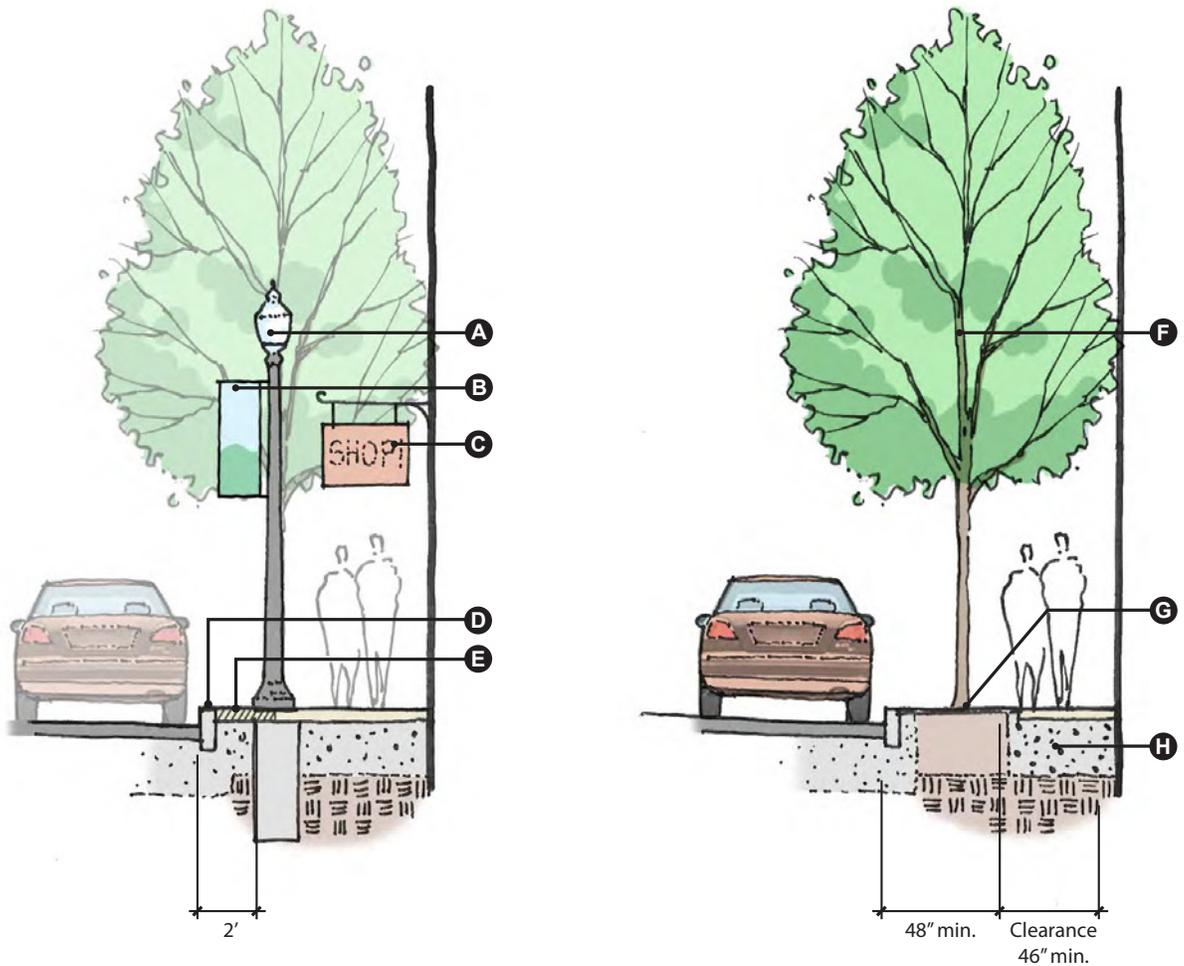
PLAN FOR INFILL

As stated in the Opportunities Plan narrative, concentrating future development into the downtown will enhance the economic and cultural vitality of the downtown and strengthen the existing urban fabric. There are currently a number of properties in the downtown that are empty or underutilized, do not represent the best use for the location, or could support increased densities. The general model for such infill development is a 3-story mixed-use building, with retail space on the first floor, office space on the second floor, and housing on the third floor. Actual uses for proposed infill sites will likely vary from this model due to specific programmatic requirements, but the mixed-use model serves as a good starting point. Buildings must be scaled and detailed appropriately for this downtown context, which is composed predominately of 2-3 story buildings, many of which have brick facades. Although there are a number of attractive and beautifully detailed historic buildings in the downtown, recent construction at locations such as the Tip Top and Railroad Row indicates that well-designed contemporary detailing can be integrated effectively into the historic downtown while expressing the forward-looking creative energy of local businesspeople and residents.



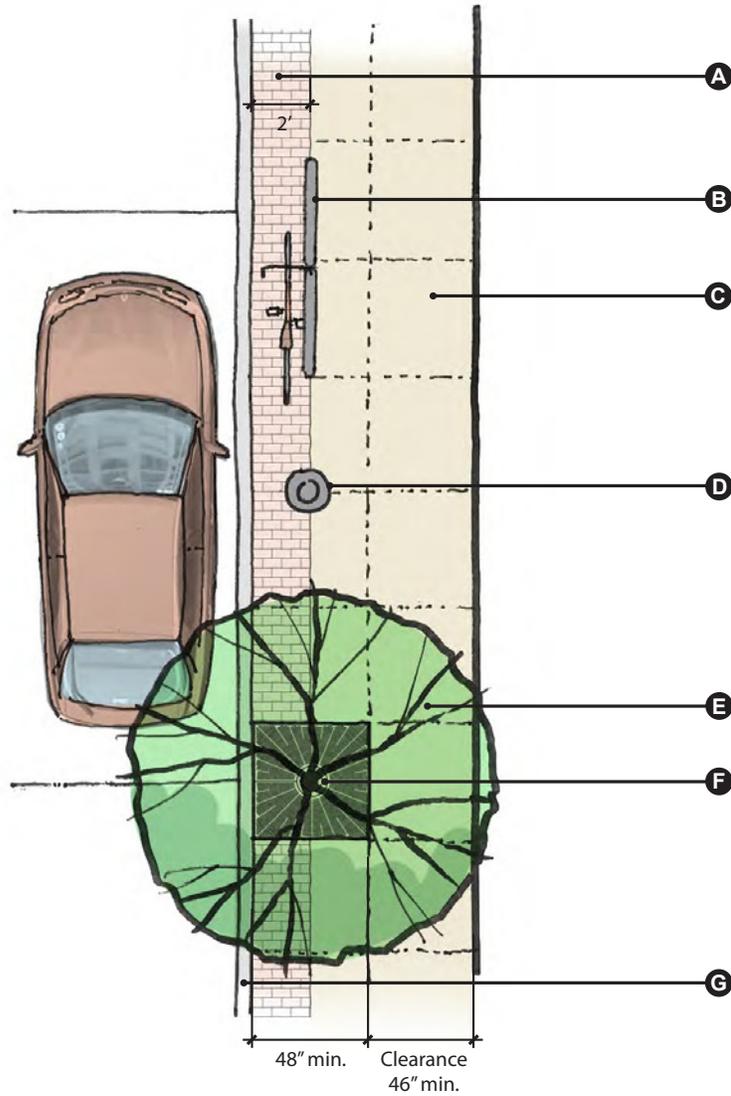
UNIFY AND DEFINE THE DOWNTOWN VISUALLY THROUGH ENHANCED STREETSCAPE

During the public workshop, numerous participants stated that they perceived parts of the downtown as being ‘outside of the locus of energy’ in the downtown. In particular, the sense that you are in the downtown tends to diminish as building densities decrease when traveling north on North Main or south on South Main. While infill would address this in terms of architectural massing, providing additional streetscape



- A** Street light with metal halide lamp + full cut-off photometrics to match style of existing lights
- B** Optional banner / hanging basket with annuals
- C** Traditional hanging shop sign
- D** Granite curb
- E** Optional 2' wide brick / concrete paver band (allows for potential underground utility access)
- F** Street tree selected for columnar form, tolerance of salt + urban conditions
- G** Cast-iron tree grate (4' sq. min.)
- H** 'Structural Soil' continuous under sidewalk for enhanced tree rooting conditions

elements such as street trees, street lights, and street furniture would also help to unify the downtown. New banners and/or hanging baskets on the street lights represent relatively low-cost improvements to further aid in this effort. Adding a brick paver band along the curb for new and reconstructed sidewalks of sufficient width could add another level of detail refinement while allowing for potential future under-grounding of utility lines.



- A** Optional 2' wide brick / concrete paver band (allows for potential underground utility access)
- B** Bike rack (where appropriate)
- C** Concrete paving (broom-finish or exposed aggregate)
- D** Street light with metal halide lamp + full cut-off photometrics to match style of existing lights
- E** Street tree selected for columnar form, tolerance of salt + urban conditions
- F** Cast-iron tree grate (4' sq. min.)
- G** Granite curb

Notes:

1. All signage to be located in 2' paver band.
2. Crosswalks to be 'Imprint', brick pattern stamped resin

One of the most isolated portions of the downtown is the Miller/Legion Lot. As a result, we propose that the redevelopment of this site should include the extension of Currier Street to South Main. The continuation of street trees and matching street lights onto the Currier Street Extension would be essential for integrating this area. The existing stretch of Currier Street would also benefit from street lights (street trees are problematic spatially) to make it feel more like a pedestrian-oriented street and less like an alley. Street furniture of consistent styling such as benches, trash receptacles, and bike racks could be utilized throughout the downtown in appropriate locations, thereby further reinforcing the urban identity.



Above: Simulation of Possible Streetscape Upgrades. Inset: Existing Conditions.

ENHANCE THE PEDESTRIAN EXPERIENCE

All of the streetscape improvements noted in the previous section will support an enhanced pedestrian experience. While these improvements are aesthetic in nature, they are also practical. Supporting a ‘park and walk’ approach for visitors would be very beneficial to local merchants. Once visitors have found parking with ease, the next step is to get them from their cars to all the retail and tourist amenities that the downtown has to offer. The following elements are critical for an improved pedestrian experience that encourages people to fully explore the downtown and linger:

- Stronger connections - continuous tree-lined sidewalks, improved alleyways, crosswalks,
- Visual ‘anchors’ + destinations
- Pedestrian amenities – benches, trash receptacles, bike racks, etc.
- Pedestrian safety – fill in gaps in downtown street lighting, lighting in alleys, curbed sidewalks
- Nodes and corridors of public open space – urban plazas, green spaces, river walk
- Wayfinding – signage, maps, and kiosks

In addition to serving the needs of visitors, it is important to also address the needs of residents in surrounding neighborhoods. Providing improved hillside paths with lighting and ongoing upkeep would encourage more residents to journey downtown from the upper neighborhoods. As residents of the downtown have also expressed an interest serving the needs of bicyclists, bike racks should be provided in key locations. For security reasons, the bike racks should be located in areas that get a lot of pedestrian traffic and are well illuminated. Bike racks should be sized based on the amount of expected use and spatial constraints. ‘Ribbon’ type racks allow for approximately 3 – 9 bikes to be oriented perpendicular to the rack, and thus require a decent amount of space. A single ‘inverted U’ type bike rack can be located in more constrained areas to hold up to 2 bikes parallel to the rack (see Typical Sidewalk Plan Detail.) Although identifying specific locations for street furniture is beyond the scope of this project, we have identified a number of potential locations for bike racks (see Schematic Design + Development Plan – Downtown Core.)



Above: Simulation of Possible Streetscape Upgrades. Inset: Existing Conditions.

ADD MORE GREEN!

All of the streetscape improvements noted in the previous section will support an enhanced pedestrian experience. As noted in the analysis section, White River Junction suffers from an excessive amount of asphalt paving, much of which is unnecessary. Replacing asphalt with landscaped areas would soften some of the ‘rough edges’ in the downtown, make it a friendlier place to visit, and improve the environment. Since much of the stormwater currently gets piped directly to the river without treatment, allowing for more on-site infiltration would improve the river’s water quality. With that in mind, we recommend the following ‘green’ additions:

- Add landscaped islands in parking lots where possible
- Replace asphalt around buildings that aren’t necessary for auto or pedestrian use with landscaped areas
- Address stormwater creatively with stormwater gardens and bioswales
- Plant trees to reduce heat island effect, provide cooling for pedestrians and buildings, improve air quality, and improve aesthetics
- Potential for ‘urban forest’ in grey spaces around railroad tracks
- Use permeable paving to allow stormwater to infiltrate on-site
- Promote green roofs and walls



Examples of (clockwise from left) a green roof, permeable paving and a green wall.



Above: Simulation of Possible Bioswale Planting. Inset: Existing Conditions.

IMPROVE ACCESS TO RIVERS

The White River and Connecticut River represents an underutilized natural resources, which have great recreational potential. Although many cities throughout the United States have historically turned their backs to the rivers that run right alongside them, there has been a relatively recent wave of riverfront revitalization nationwide. The idea of a river walk appeals to many residents of WRJ, which warrants further exploration of its feasibility. The greatest practical challenge is related to navigating around the railroad bridges or across the railroad tracks. Ideally the paths would support both pedestrians and bicyclists, and it would be a worthwhile goal to eventually provide a path network that connects to adjacent towns and cities.

Interpretive signage and public art could be installed along the river walk, thus providing an educational and cultural draw for visitors. Learning about local history and ecology while taking in views of the river would likely prove to be a popular activity for children and adults alike. As WRJ has such a strong arts community, the river walk represents an excellent potential venue for displaying outdoor sculptures and could direct visitors to galleries and studios in town.

In addition to the river walk, an outlook platform in Veteran's Park would allow visitors to gain a view of both the river and other recreational destinations across the river such as the park and bandstand. This feature was a part of the original plan for Veteran's Park that was developed by LandWorks in 1992, but was not implemented at the time due to budget constraints.



Riverwalk examples.

Providing for a robust riparian buffer and riverbank restoration would be an important part of a river walk plan in order to protect and improve water quality. The path itself could be surfaced with a permeable material such as gravel to allow for stormwater infiltration, whereas composite decking could be utilized in stretches that span over irregular or extreme topography. The recently completed river walk in Winooski, Vermont, represents a good example of such a feature in an urban area.

Schematic Design & Development Plan

Building on the framework of the Conceptual Opportunities Plan, the LandWorks Team prepared a Schematic Design + Development Plan to envision tangible improvements that could address the identified opportunities for an enhanced downtown.

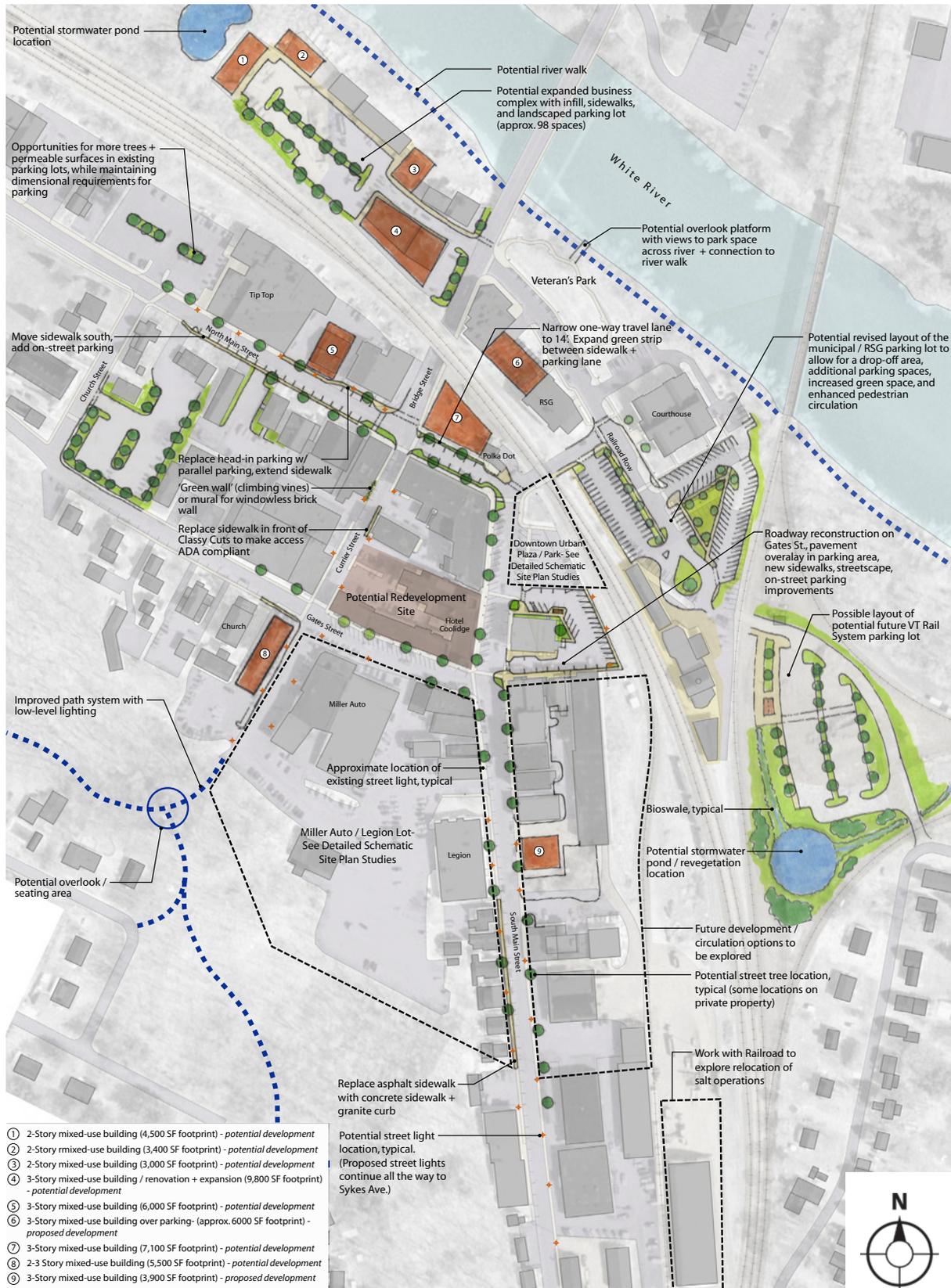
Weaving together actual projects being explored by local developers/property owners with other potential improvements, this plan illustrates how a combination of public and private developments can work together to strengthen connections between all the key elements of the downtown, including local businesses, venues for the Arts, transportation, and public open spaces. The plan is conceptual in nature and contains the following elements for revitalization:

- Infill locations
- Street tree locations (some in tree grates, some in planting areas)
- Street light locations
- Path connections - river walk + neighborhood paths
- Landscaped islands in parking lots
- Revised curblines + traffic bulb-outs per RSG traffic analysis
- Revised parking lot configuration for Courthouse parking area per RSG plan
- Public open space
- Stormwater pond locations
- Delineation of areas in need of more detailed study

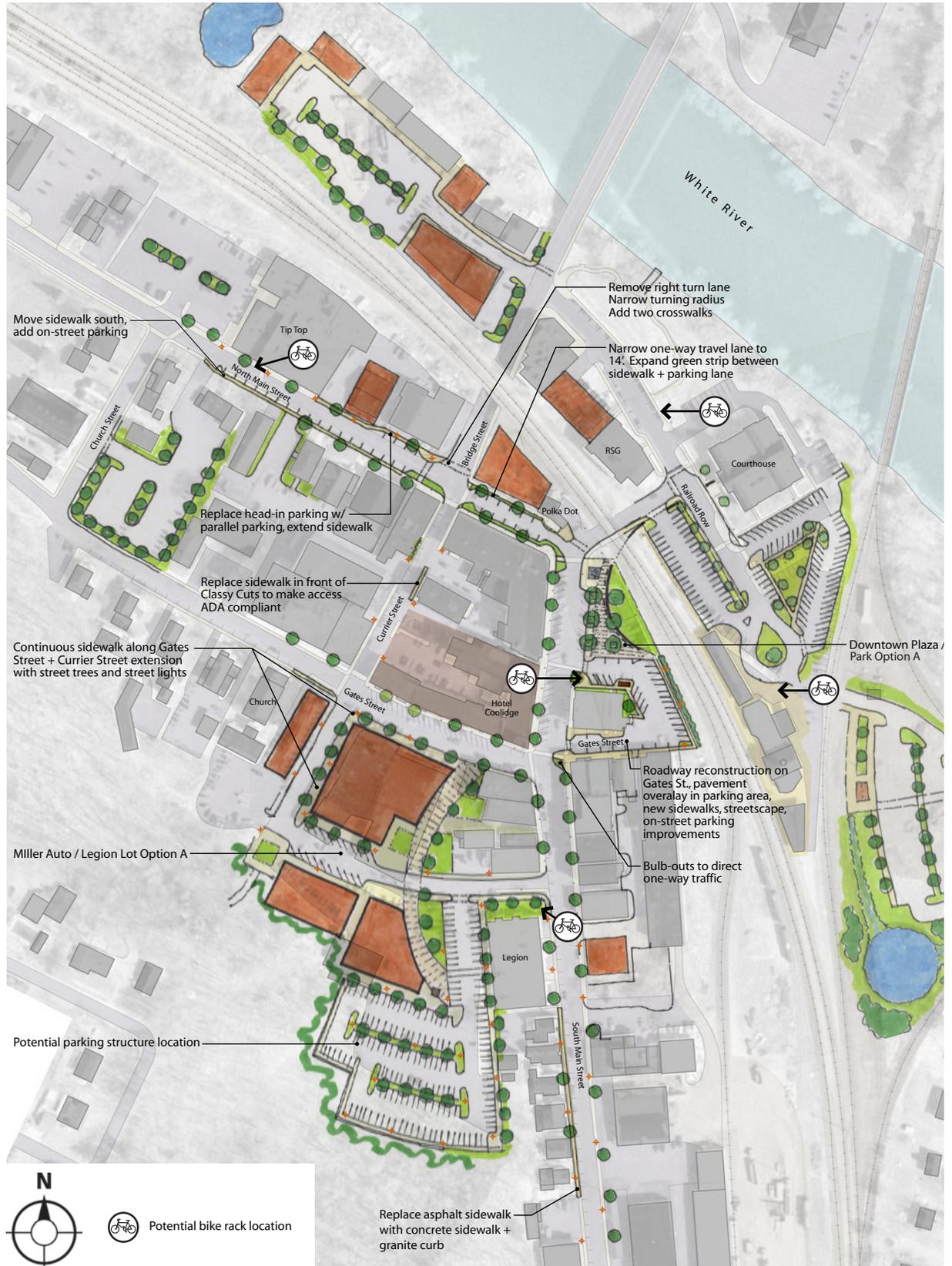
Schematic Design & Development Plan: Overall Context



Schematic Design & Development Plan: Infill, Streetscape & Public Open Space



Schematic Design & Development Plan: Downtown Core



North Main Street between Bridge Street + Joe Reed Drive

Forming a critical gateway to the downtown, this section of North Main Street between Bridge Street and Joe Reed Drive is worthy of detailed study. As discussed in the Transportation System Assessment section, our suggested improvements will address a number of practical issues. By narrowing the one-way travel lane to 14' and providing bulb-outs, the one-way vehicular flow will become more obvious to cars exiting Joe Reed Drive. From an aesthetic perspective, street trees can be planted in the green strips to help soften the architecture. Combined with a well-designed new building for the empty lot next to the Polka Dot, this stretch of Main Street could help to create a positive gateway experience for visitors entering the downtown core.



Miller Auto / Legion Lot Site – Schematic Site Plan

The Miller Auto / Legion Lot site represents an exciting redevelopment opportunity in the downtown, and the Hartford Development Corporation has agreed that it is the highest priority in terms of downtown redevelopment. The bulk of this site is currently covered by an underutilized and poorly illuminated asphalt parking lot, which serves the Legion of Honor, VFW, and adjacent businesses. Numerous downtown businesspeople have expressed concern for nighttime safety in this lot, and parking studies conducted by RSG have indicated that it is underutilized.

The other dominant structure on the site is the Miller Auto building, which currently supports Northern Stage theater company's needs for rehearsal space, storage, set-building, and theater arts education. Northern Stage, who purchased the 1.5 acre property in November 2008, has the potential to expand upon its already highly popular professional theater events and education programs. At the time of this report, they are in the planning phase of a new theater facility that would have a potential seating capacity of approximately 350 seats for the main stage and 99 seats for a second stage. Although we conducted our site plan studies with

the potential new theater in mind, programmatic and spatial requirements were not available at the time of our studies.

Our design proposals for the Miller Auto / Legion Lot site were based on the following:

- Public input regarding the potential that this site holds
- Available buildable area on the site, the 'lay of the land'
- The architectural context, in terms of scale, massing, and orientation
- Enhance the critical mass of retail options to attract visitors and infuse life into the downtown with offices and housing
- Provide sufficient parking capacity and direct vehicular traffic to and from parking lot / structure in a manner that enhances businesses and safety
- Screen service and parking areas, provide positive visual 'anchors' and pedestrian connections

Although there are some variations in terms of building massing, vehicular circulation and parking, all of the concepts are characterized by the following elements:

- Relatively dense mixed-use infill with first floor retail
- New street to connect Currier Street extension to South Main Street
- Connection to improved hillside paths
- Pedestrian promenade with decorative paving, shade trees, benches, lighting
- Improved alleyway connection with decorative planter pots and lighting



Examples of Pedestrian Promenades

Option A. In this option, an arcing pedestrian promenade connects a large surface parking lot to the center of downtown. The scale of the buildings in this option is more modest compared to some of the other concepts. Future development of a parking structure over the surface lot would be a possibility. The new road connecting the Currier Street extension with South Main Street features two-way traffic circulation with angled parking. A pocket park serves as a visual terminus of Currier Street and marks the entry to an improved path system up the hill.



- ① 3-Story mixed-use building (24,000 SF footprint)
- ② 3-Story mixed-use building (10,800 SF footprint)
- ③ 3-Story Theater / mixed-use building (12,000 SF footprint)
- ④ Pedestrian promenade with decorative paving, shade trees, benches, lighting, info kiosk at southern terminus
- ⑤ Alleyway connection with decorative paving, planter pots, lighting
- ⑥ 'Pocket Park', connection to hillside paths
- ⑦ 2-way traffic circulation (22 on-street spaces)
- ⑧ Expanded at-grade parking lot with lighting + shade trees, 30'+ retaining walls required (170 spaces)

Option B. In this option, a pedestrian promenade connects a single-deck parking structure to the center of downtown. The theater building serves as an anchor at the southern terminus of the promenade, while a drop-off circle would enhance the arrival experience at this potentially distinctive building. If this location is not practical from a land ownership and timeline perspective for the theater, then it could instead support other popular destination uses. The new road connecting the Currier Street extension with South Main Street features two-way traffic circulation to the parking deck and one-way traffic with angled parking to Gates Street. An amphitheater serves as a visual terminus of Currier Street and marks the entry to an improved path system up the hill.



- ① 3-Story mixed-use building (30,300 SF footprint)
- ② 3-Story theater / arts / mixed-use building (23,400 SF footprint)
- ③ Pedestrian promenade with decorative paving, shade trees, benches, lighting, etc.
- ④ Alleyway connection with decorative paving, planter pots, lighting
- ⑤ Amphitheater, connection to hillside paths
- ⑥ 2-way traffic circulation to parking deck, 1-way to Currier (27 on-street spaces)
- ⑦ Single-deck parking structure with lighting (178 spaces)

Option C. In this option, a pedestrian promenade connects a larger single-deck parking structure to the center of downtown. The new road connecting the Currier Street extension with South Main Street features two-way traffic circulation with parallel parking. Creating a strong retail environment for this new tree-lined street is a priority in this plan, and the theater could be integrated into a large mixed-use building fronting Gates Street. A pocket park serves as a visual terminus of Currier Street and marks the entry to an improved path system up the hill. A potential future connection between South Main Street and the parking structure could improve circulation to businesses at the south end of the downtown.



- ① 3-Story mixed-use building (30,300 SF footprint)
- ② 3-Story mixed-use building (12,000 SF footprint)
- ③ 3-Story mixed-use building (9,000 SF footprint)
- ④ 2-Story mixed-use building (3,200 SF footprint)
- ⑤ Pedestrian promenade with decorative paving, shade trees, benches, lighting, etc.
- ⑥ Alleyway connection with decorative paving, planter pots, lighting
- ⑦ 'Pocket Park', connection to hillside paths
- ⑧ 2-way traffic circulation (23 on-street spaces)
- ⑨ Potential connection to South Main
- ⑩ Single-deck parking structure with lighting (240 spaces)

Option D. This option represents the most intensive development of the site with a 3-story mixed-use building that creates the face for a large parking garage that is built into the hillside. This thereby allows for a long retail promenade that leads to the center of downtown. The promenade is flanked on one side by a continuous park space, which provides an opportunity for stormwater infiltration. The new road connecting the Currier Street extension with South Main Street features two-way traffic circulation without on-street parking. A pocket park serves as a visual terminus of Currier Street and marks the entry to an improved path system up the hill. A potential future connection between South Main Street and the parking structure could improve circulation to businesses at the south end of the downtown.



- | | |
|--|---|
| ① 3-Story theater / mixed-use building (30,300 SF footprint) | ⑥ 'Pocket Park', connection to hillside paths |
| ② 3-Story mixed-use 'wrap-around' building (24,500 SF footprint) | ⑦ Continuous park space, stormwater infiltration features |
| ③ 3-Story mixed-use building (9,800 SF footprint) | ⑧ 2-way traffic circulation |
| ④ Pedestrian promenade with decorative paving, fountain, benches, lighting, etc. | ⑨ Potential connection to South Main |
| ⑤ Alleyway connection with decorative paving, planter pots, lighting | ⑩ At-grade parking with lighting (43 spaces) |
| | ⑪ 3-Story parking garage (approx. 250 spaces) |
| | ⑫ Potential future redevelopment (3 story mixed use) |

Downtown Urban Plaza / Park + Adjacent Parking Lot

Downtown White River Junction would benefit greatly from a well-designed urban plaza. Veteran's Park was a great addition, but it is located outside of the downtown core and is not urban in character. As the geographic center of the downtown, this lot would better serve as a gathering place for people instead of vehicles. An urban plaza full of vitality would certainly encourage visitors to get out of their cars when entering downtown from North Main and could potentially support a range of outdoor cultural events. The loss of parking could be accommodated with additional off-street parking on the renovated Miller Auto / Legion Lot.

- Our design proposals were based on the following:
- Site history - lot was formerly 'Loyal Park'
- Provide well-detailed and visually rich urban plaza to attract pedestrians to the 'core' and encourage them to linger (and spend money!)
- Provide for adequate parking, while balancing the need for public open space
- Soften the downtown with trees and lawn, buffer views of the expanse of parking across the tracks
- Provide ample seating
- Encourage movement across the tracks to unify the Railroad Row area with the downtown core
- Provide gathering / event space
- Provide a visual 'anchor' at the intersection of the three streets (potential public art location)
- Potential new bus shelter
- Maximize parking within remaining parking area, provide continuous sidewalk around lot

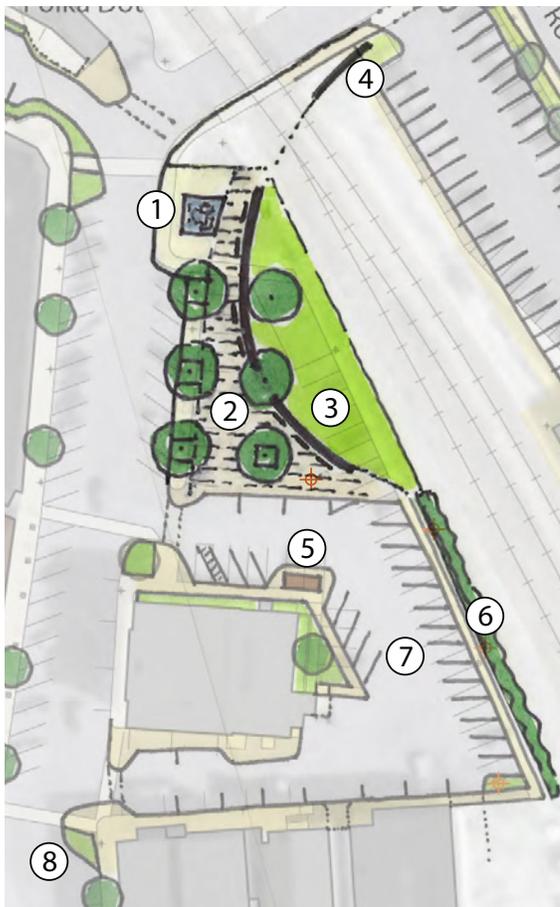


Urban Plaza & Public Art Examples.

“I am happy to see the design you prepared provides a town green for visitors to feel they have ‘arrived.’ I think a green space will help create a walkable downtown where people will begin to slow down and enjoy WRJ, rather than just jumping in and out of their cars.”

– Mary Wunderlich, Hartford resident

Option A. One of the most common complaints that we heard about downtown is the sense that it feels divided by the railroad tracks, and that the newer area of Railroad Row feels disconnected from the older area in the core downtown. In this scheme, we address this issue with the provision of an arcing stone seatwall that stitches across both sides of the railroad tracks and serves to link both areas of the downtown visually and encourage pedestrian travel. A fountain / sculpture acts as a visual terminus to North Main Street, South Main Street, and Joe Reed Drive, visually announcing that this plaza is the center of activity. Although generous seating is provided in this scheme, there is less area for outdoor events than in Option B.



- ① Fountain / sculpture
- ② Pedestrian plaza with decorative paving, open canopy trees, benches, etc.
- ③ Lawn area defined by stone seatwall
- ④ Stone seatwall continues across tracks, ends at courthouse
- ⑤ Potential location for new transit shelter
- ⑥ Continuous sidewalk along perimeter of parking area
- ⑦ Revised parking configuration (approx. 33 spaces, not including S. Main)
- ⑧ Bulb-out (with perennial plantings) to direct northbound one-way traffic to the left

Option B. In this scheme, linking the two sides of the tracks is achieved literally with a pedestrian bridge between two small buildings / structures. There are numerous possibilities for these buildings, such as a community building (with event and downtown destination listings) and a transit center building- both of which could generate significant activity in the heart of the downtown. With or without the bridge, a well-detailed building on the west side of the tracks could serve as a visual anchor for North Main Street and could buffer the view of the courthouse and its parking lot, which doesn't represent one of the better views downtown. Although a structure in this location could limit views of 'Old 494' from North Main, it could potentially serve as a stronger icon from more vantage points. The sculptural train and bridge forms utilized at the Bellows Falls Visitors Center are a good example of a bold architectural move that serves as a memorable icon in that town. The feasibility of a pedestrian bridge across the tracks has not been studied, but a rooftop terrace could also serve the same function- allow for a central viewing location to see what White River Junction has to offer. Generous event and seating space, defined by an arcing stone seatwall, is also provided in this option.



- ① 2-Story community building with stair/elevator tower, rooftop terrace (1,500 SF footprint)
- ② Pedestrian bridge over R.R. tracks
- ③ 2-Story Transit Center building with stair tower, rooftop terrace (1,350 SF footprint)
- ④ Bus pickup area
- ⑤ Event space
- ⑥ Pedestrian plaza with decorative paving, open canopy trees, benches, lighting, etc.
- ⑦ Lawn area defined by stone seatwall
- ⑧ Alternative transit shelter location
- ⑨ Continuous sidewalk along perimeter of parking area
- ⑩ Revised parking area (approx. 33 spaces not including S. Main)
- ⑪ Bulb-out (with perennial plantings) to direct north-bound one-way traffic to the left

Wayfinding & Branding

Wayfinding

“Finding your way has never been more important . Getting places on time, with minimum stress, is more valuable than ever. Easy accessibility to services whether on foot, by public transit or by automobile is not just a matter of courtesy or common sense. It is an economic necessity.”

Wayne Hunt in *Designing and Planning Environmental Graphics*

Introduction. Wayfinding literally means *finding one’s way to desired destinations*. Wayfinding programs consist of signs, maps, kiosks and other architectural elements to make a downtown more accessible and easier to navigate. Well designed wayfinding systems facilitate safe vehicular and pedestrian traffic, encourage parking and walking, and support a successful visitor experience. Those who have a safe and enjoyable experience in White River Junction will be more likely to return. Effective wayfinding is a key component of successful downtowns. In fact, in Mark Brodeur’s April 2003 Planning magazine article entitled “Ten Tips for Designing a Consumer Friendly Downtown” wayfinding is listed as one of those key ingredients.

The Wayfinding component of this Revitalization Plan is based on the Connecticut River Byway Wayfinding Program developed to serve the Waypoint communities. The Byway Plan incorporated the input of Hartford Town Officials and the Director of the office of Planning and Development Services. The initial plan focused on vehicular and parking directional signs. In White River Junction, two of the key components of the Byway wayfinding system that are already in place are the kiosk at Veterans Memorial Park and the pedestrian sign at the junction of Railroad Row and Joe Reed Drive. The village of White River Junction is at a scale that is readily walkable, and a key element of the plan is to reinforce this walking scale and the ease with which visitors can locate parking.



PRIORITIES FOR WAYFINDING. The highest priorities for enhancing White River Junction’s Wayfinding System include the following actions:

1. Implement consistent trailblazer signs from the Interstate to the downtown. A high priority for wayfinding in White River is the need to develop a consistent and highly visible set of guide or trailblazer signs to assist travelers coming to the downtown from the Interstate and Routes 4 and 5. This can be accomplished either by using Vermont’s existing OBDS system for off premise signing or petitioning the state to allow wayfinding signs outside of the officially designated downtown district if expressly used to guide travelers to that district. This request has been forwarded to the Vermont Downtown Program for review and support. The next step would be to take it before the Travel Information Council, which oversees sign applications for the OBDS system and other sign matters on state highways.



The Veterans Park Kiosk

2. Install consistent Parking Directional and Parking Identification Signs. Once downtown, and to reduce traffic and reinforce the pedestrian scale of the village, the intent is to have visitors park and then walk to their destinations. Thus one of the most important elements and highest priorities for implementation going forward will be the Parking Directional Signs leading visitors to the municipal parking lots and the Parking Identification Signs at those lots to confirm the availability of public parking.

3. Develop a more extensive set of Pedestrian Directional Signs.

To complement the initiative to encourage visitors to park and walk, the next priority for the wayfinding program should be the pedestrian directional signs, which will guide visitors to key destinations within the downtown. Pedestrians should be guided to public restrooms as part of the next phase of sign development. Currently, access to public restrooms is limited which reinforces the need to identify the two options that currently do exist; the Municipal Building and the Visitor’s Center in the Railroad Station.

New Pedestrian Directionals in White River



The employment of the Byway design that references the system as it is implemented in the downtown recognizes the potential connectivity and economic development associated with the Connecticut River Byway. The Byway funding has enabled communities like Hartford to implement appropriate components of the Byway Wayfinding Project designs that work for the individual towns. The Town of Hartford should explore the potential to use the signs to identify the downtown with the addition of a future logo or brand (as it is developed) that can be employed with the Byway logo on the logo panels of individual signs.

SECOND SET OF PRIORITIES FOR WAYFINDING. The second tier of priorities and actions for the White River Junction wayfinding system are outlined as follows:

- 1. Add to the pedestrian directional systems to connect the downtown with the neighborhoods to the south and west, as well as to the commercial area across the White River.** These signs can support overall town connectivity and further support the integration of the village with surrounding residential and commercial areas. Signs should be placed at key junctures such as at Gates and Currier Street, and along North Main Street in the vicinity of the Tip Top building.
- 2. Develop an Waypoint Center Identification Sign for the Visitor Center in the Railroad Station.** This sign should be developed so as to connect to the other facilities of similar purpose along the Byway and to emphasize Hartford's central location and relationship to the Connecticut River Byway as a whole.
- 3. Update the "Proposed Sign Locations" map (revision dated 3-13-08) and the "Proposed Sign Schedule" (revision dated 3-13-08)** for White River Junction as developed for the Connecticut River Byway Sign Project to reflect the signs installed and those to be placed in subsequent phases of the program.
- 4. Develop Additional Wayfinding System Components.** As the downtown further develops in a manner envisioned in this plan, information and destinations will need to be added to the existing sign system. An additional informational kiosk may be desirable in one or two other downtown locations - one at a new park and destination area near to or at the Railroad Station, and one in the vicinity of the future Gates Street redevelopment when Northern Stage constructs their new facility at the Miller Lot and when the adjacent American Legion Lot is redesigned or developed as a parking structure. Finally, a walking map available online on the town's website or as a "take-away" from the kiosks would be another tool to support a pedestrian scaled and walkable downtown. The walking map could also rekindle the historic walking tour that was developed with interpretive signs in the late 1990's. The possibility of developing additional interpretive signs in the downtown area should also be explored. There is such a rich legacy of settlement, commerce and history to build on, this opportunity in and of itself can become an attraction that will draw railroad and river enthusiasts.

SOME ADDITIONAL CONSIDERATIONS FOR WAYFINDING.

Two additional opportunities exist to enhance wayfinding and the visual environment of White River Junction, and these include 1) reducing sign clutter and 2) implementing a public art program.

Reducing Sign Clutter. Often there are too many signs as part of any streetscape, and this condition can affect both aesthetics and safety - there are some areas in the downtown where these conditions exist. Thus it is recommended that a thorough review of all signs in the downtown right of ways and on public property be conducted with the intent to either remove extraneous or duplicative signs altogether, or to relocate or co-locate signs in appropriate locations so as to facilitate safe travel and safe streets and sidewalks. This type of initiative is an integral part of managing the information environment. The process of relocating or removing old signs, as well as adding new signs, must be undertaken within the parameters of the MUTCD (the Manual on Uniform Traffic Control Devices) and, on state highways must involve local VTrans engineers and district managers. Note that Dig Safe also must be contacted when installing sign supports or poles below grade.

A Public Art Program. White River Junction benefits from the creative talents of architects, landscape architects, artists, performing artists and cartoonists. It is natural to express this energy and art in the public realm, and many cities and towns in Vermont have explored and implemented public art projects. In downtown Brattleboro, the centrally located Wells Fountain Park includes an environmental art work by nationally recognized artist Malcolm Cochran, which celebrates the history of the park site and engages residents and visitors with its low seating and surrounding landscaping. Burlington has several examples of public art works which provide a draw and enliven the environment. Veteran's Memorial Park on Railroad Row has an example of small-scale public art with the sculptured waterfowl designs that are in place as part of the memorial.

The Town or the Hartford Development Corporation could take the lead by setting up a committee to review the possibilities and process for developing public art in the village. The Vermont Arts Council can be an important resource in this endeavor and should be contacted to provide support and guidance. In the short term, cartoonists from the Institute or other local artists could be engaged in developing temporary murals on construction site fencing. Collaborative efforts with nearby art museums such as the Hood at Dartmouth might provide some opportunities for temporary exhibits as well.

Some Small-Scale Public Art Examples in Whit River Junction



Branding White River

“The word ‘brand’ comes from the old Norse or Germanic root meaning ‘burn’. We use this meaning literally when we talk about branding an animal, or an amphora of wine, to indicate its owner; we mean it figuratively when we talk about all the attributes of a product that make a lasting impression in a customer’s mind.”

Matthew Healy in *What Is Branding?*, Rotovision, 2008, p. 6

A brand is meant to convey lasting impressions in a customer’s mind with regard to the attributes and qualities of a certain product or place. A brand conveys the promise of satisfaction or fulfillment that accrues from using or experiencing that which is being branded - and a brand can also help tell the story.

The application of branding to tourism destinations is not a new concept, but its application for individual cities and towns that wish to establish a sense of place and identity is a relatively new trend. Even an area as small as several square blocks, such as White River’s downtown, can be successfully branded through signing, web sites, events and ephemera such as banners and merchandising. The goal in developing a brand for White River would be to help it stand out as a destination for tourism, commerce and the arts, all elements which are part of the White River story. Indeed, as this Revitalization Plan took form, many individual perspectives and impressions emerged which articulate the components of a White River “brand” and these include:

- The evolving importance of the arts in the village, as evidenced by the ascendancy of both the Northern Stage organization and the Institute for Cartoon Studies;
- The historic role of the railroad in the life and times of White River Junction, and the presence in a central place in the village of the icon “Old 494”;

Some current branding elements



- The confluence of rivers and roads which make White River the gateway to Vermont and an important stopping point on the way to and from various destinations in the Upper Valley and northern New England.

Sentiments are strong when any of these “branding” elements are discussed with regard to White River, and indeed past initiatives such as the “River City Revival” and the location of Old 494 in the downtown echo the themes which recur in the community and which reflect the historic identity of White River Junction. Yet the 21st Century has seen a resurgence of the downtown as a central place in the life and times of Hartford and the region, and the vibrancy of the arts contribute to creating a unique small town culture that is both urban and “Vermont”, service oriented yet “funky” and fun. Added to this is the role of the Connecticut River Byway as a recreational, cultural and economic force that links the region and promotes the historic downtowns within it.

These are some of the considerations that inform the branding process. Many downtown destinations and municipal development organizations are now recognizing the value of and need for branding; for example, the City of South Burlington launched a new branding initiative which has percolated through all aspects of city government and operations and is not just focused on the commercial center. For White River Junction the promise is present - a small, engaging, eclectic, artistic, historic, and walkable downtown that has much to offer the visitor, the worker and resident and hopefully, there will be future projects and developments which will sustain these qualities. With this in mind, an important next step in the life of White River Junction, integral to the future success of the revitalization plan, will be to develop its brand and a targeted, creative, and effective program of marketing and promotion - a necessary initiative that will help to capture the hearts, minds and money(!) of those who would visit, shop or develop a new business here.

Capital Improvement Program

Capital Improvement Program

Overview. After all the studies and plans were complete, the next task was to develop cost estimates for distinct projects to aid in the planning and budgeting process. Because the plans that we developed for this report are conceptual and do not represent detailed construction documents, the cost estimates should also be considered conceptual in nature.

Each consultant developed cost estimates with a breakdown of rough construction costs for potential project components, with allowances provided for engineering and design fees. Pathways identified utility infrastructure improvements, some of which were considered recommended stand-alone improvements, while others were necessitated by the proposed improvements and development scenarios. Likewise RSG developed cost estimates to address their suggested road and sidewalk improvements as well as those associated with the design and development scenarios. LandWorks focused on streetscape improvements including lighting and landscaping, while also developing cost estimates for public open spaces such as the pedestrian promenade in the Miller / Legion Lot site and the Downtown Urban Plaza / Park. Numbers were not generated for any of the architectural infill that was represented in the plans.

The cost estimates were then summarized in matrix form, which graphically represents dependent relationships between the various projects:

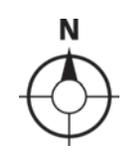
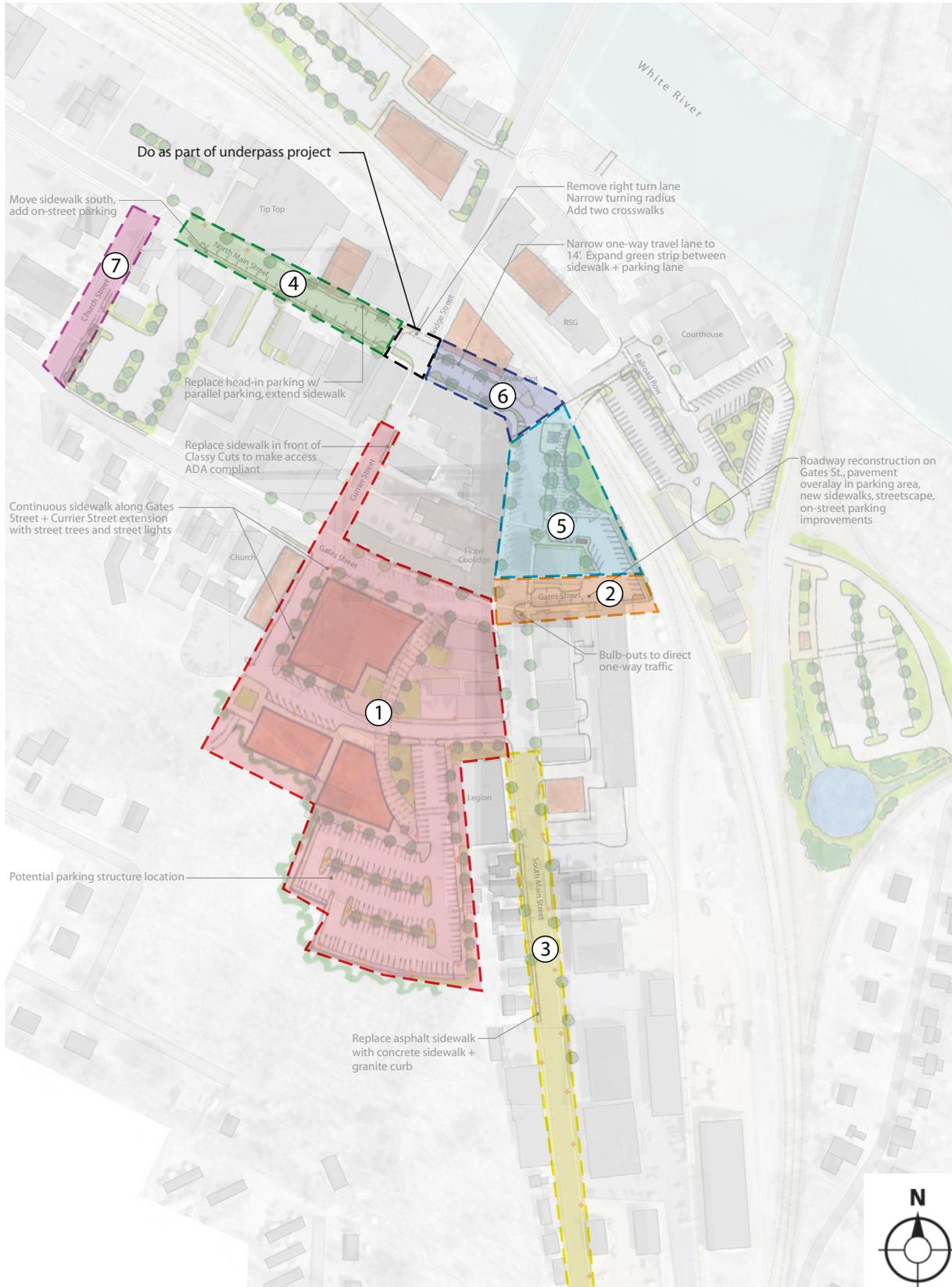
Location	Streetscape / Landscape Improvements	Sidewalk / Streetscape Improvements	Utilities / Infrastructure Improvements	Total Cost	Notes
North Main Street	Planting Site Furniture Lighting Total Cost \$96,643	Sidewalk Roadway Signs Total Cost \$181,286	Stormwater Total Cost \$47,430	\$325,359	Utility costs represent cost to accommodate relocated curb lines per Potential Infrastructure Improvements Plan
South Main Street	Planting Site Furniture Lighting Total Cost \$166,605	Sidewalk Total Cost \$62,448	Water Main Total Cost \$738,265	\$967,318	Sidewalk replacement presents an opportunity to install new street lights on the west side of S. Main Street
Gates Street West	Planting Site Furniture Lighting Total Cost \$56,260	Sidewalk Roadway Signs Total Cost \$65,444	N/A	\$121,704	
Gates Street East	Site Furniture Lighting Total Cost \$14,717	Sidewalk Roadway Signs Total Cost \$118,389	Water Main Total Cost \$52,700	\$185,806	Gates Street East + Downtown Lot could be done in conjunction with the Downtown Park project or done independently.
Currier Street	Planting Lighting Total Cost \$29,070	Sidewalk Roadway Signs Total Cost \$13,824	Water Main Total Cost \$120,280	\$163,174	
Bridge Street	Planting Total Cost \$4,782	Curbing Total Cost \$7,440	N/A	\$12,222	
Downtown Park & Adjacent Parking Lot Improvements	Planting Hardscape Site Furniture Lighting Wayfinding Public Art Total Cost A \$365,373 Total Cost B \$336,255	Sidewalk Roadway Signs Bus Shelter Total Cost \$132,386	N/A	\$497,759 \$336,255	Downtown Park could be done in conjunction with the Gates Street East + Downtown Lot project or done independently.
Miller / Legion Lot (including Currier Street Extension)	Planting Hardscape Site Furniture Lighting Wayfinding Total Cost A \$738,832 Total Cost B \$708,696 Total Cost C \$779,986 Total Cost D \$1,221,501	Retaining Wall Sidewalk Roadway Signs Parking Lot /Structure Total Cost A \$1,094,641 Total Cost B \$5,375,409 Total Cost C \$7,464,583 Total Cost D \$8,876,153	Water Main Stormwater Sewer Main Misc. Total Cost \$343,945	\$2,167,418 \$6,827,960 \$8,588,514 \$10,441,599	
R. R. Row / Courthouse Parking	Planting Site Furniture Lighting Total Cost \$83,738	Sidewalk Roadway Signs Total Cost \$308,884	N/A	\$392,622	

Priorities + Phasing. Members of the Hartford Development Corporation reviewed the cost estimates and plans to determine what they felt to be an appropriate prioritization of the proposed projects in order to best serve the overall needs of the downtown residents and businesses. The following represents their opinion of priorities:

Capital Projects

- A. Redevelopment of the Miller Auto/Legion Parking Lot / Gates Street West / Currier Street extension
 - Build from the ground up - utilities repairs and upgrades - principally water and wastewater (also need to look at storm water and electrical)
- B. Gates Street East utilities upgrade
 - Most likely should be combined with Gate Street West improvements (engineers will decide this)
- C. Lighting on South Main Street to Nutt Lane/Sykes Mt Ave -
 - Safety issue
- D. Bus Access and Shelters
- E. Paint curb bulb-outs and install signage to address people driving the wrong way on North Main Street when existing Joe Reed Drive.
 - Interim approach to test the effect and address the safety issue immediately prior to investment in full construction
- F. Street, Sidewalk, Streetscape, Lighting improvements – Combine utility improvements with surface restoration when logical extension; may need to be phased
 1. Miller Auto/Legion Parking Lot / Gates Street West / Currier Street extension block
 2. Gates Street East
 3. South Main Street – sidewalk south of Legion building
 4. North Main Street – between Church and Currier Street
 5. Downtown Plaza / Park
 6. North Main Street – Currier St to Joe Reed Drive*
 7. Church Street – Sidewalk replacement in DPW budget (not a top priority of the HDC)

CIP Priority Plan



Notes

- The current Railroad Row improvements beyond obligations under the Enhancement Grant funding are not a top priority of the HDC over utility improvements. If the funding is reprogrammed, need to decide where the RRR project fits with in the priority list.
- Intersection of Bridge, North Main and Currier Streets: remove right-turn lane, narrow turning radius and add crosswalks – do as part of the Bridge Street underpass project.
- On-going Maintenance - Suggestion to devote one hour/week of Town staff time to do these things and identify other maintenance issues for follow-up, e.g., replace burnt-out streetlight; tighten or replace missing or torn banners.
 - Painting lamp posts
 - Trash pick-up – on sidewalks and in overflowing trash receptacles
 - Sidewalk snow plowing – clearing piles and follow-up clean-up
 - Sidewalk and street sweeping
 - Remove Kiosk information board on Main Street next to old Post Office Building

Conclusion

Conclusion

This document represents the end of the project, the preparation of the Revitalization Plan, but it also signifies a beginning - the beginning of the next phase of public - private collaboration for the future of Hartford's downtown village, White River Junction.

This Plan builds on existing downtown elements and provides the basis for ensuring that all of the necessary ingredients of a successful downtown are addressed, from lighting to landscaping, from parking to wayfinding.¹ It provides a basis for infrastructure improvements and enhancements to support new development. The Plan also envisions ways in which the built form of the downtown can evolve and provides the rationale and the tools to help realize that vision, as set forth by the community during meetings, workshops and through individual communications.

1. see "Ten Tips for Designing a Consumer Friendly Downtown" by Mark Brodeur, in *Planning* magazine, April, 2003.



Out of the past is born the future, and so it is that this work marks the continuation of the process that was, as cited at the outset of this plan, conceived by the community almost 20 years ago with the River City Revival initiative. Indeed, it is the community that will sustain the energy and investment that has been ongoing in White River since that first plan was developed, and judging from the input and participation in this current effort, White River has the most important ingredient in place for a successful and vibrant downtown: a constituency of dedicated town officials, residents, businesspeople, developers and property owners. It is this constituency that will carry the plan forward and ensure its success.

“I think the possibilities for this town now are endless. There’s an energy there that come with excitement and new development. I can’t tell you how many people tell me that WRJ is the SoHo of the Upper Valley. It’s got the artists, the cartoonists and Northern Stage, and it’s one of the few towns that hasn’t been developed.”

– Bayle Drubel, White River Development, LLC



This 3D model of White River Junction will be a useful tool for future planning.

Appendix



LEGEND
 UNDERGROUND UTILITIES UG
 POWER P
 CABLE C
 TELEPHONE T
 FIRE LINE F
 UTILITY POLE F
 OVERHEAD UTILITY LINE

NOTE: THIS UTILITY PLAN IS INTENDED FOR PLANNING PURPOSES ONLY. PLEASE REFER TO ENGINEERING PLANS MAINTAINED BY THE TOWN OF HARTFORD AND CONFIRM CONDITIONS IN THE FIELD PRIOR TO DESIGN AND CONSTRUCTION. THIS INVENTORY IS BASED ON INFORMATION SUPPLIED BY THE TOWN OF HARTFORD AND IS NOT WARRANTED TO BE EXACT OR COMPLETE.



REVISION NO.	DATE	DESCRIPTION	MADE BY	CHECKED BY	APPROVED BY

OVERHEAD UTILITY INVENTORY FOR
DOWNTOWN REVITALIZATION
 WHITE RIVER JUNCTION, VERMONT

PATHWAYS CONSULTING, LLC
 240 MESSENGER STREET, SUITE 100
 LEBANON, NEW HAMPSHIRE 03766
 (603) 448-2200

SCALE: 1" = 100'
 DESIGNED BY:
 DRAWN BY: DEA
 CHECKED BY: MPM
 DATE: 01/16/09
 PROJ. NO. 11538

1
 SHEET 1 OF 4



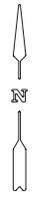
REVISION NO.	DATE	DESCRIPTION	MADE BY	CHECKED BY	APPROVED BY

STORMWATER DRAINAGE INVENTORY FOR
DOWNTOWN REVITALIZATION
 WHITE RIVER JUNCTION, VERMONT

PATHWAYS CONSULTING, LLC
 240 MECHANIC STREET, SUITE 100
 LEBANON, NEW HAMPSHIRE 03766
 (603) 448-2200

SCALE: 1" = 100'
 DESIGNED BY:
 DRAWN BY: ANM
 CHECKED BY: MPM
 DATE: 07/16/09
 PROJ. NO. 11538
 SHEET 2 OF 4

2



NOTE: THIS UTILITY PLAN IS INTENDED FOR PLANNING PURPOSES ONLY. PLEASE REFER TO ENGINEERING PLANS MAINTAINED BY THE TOWN OF HARTFORD AND CONFIRM CONDITIONS IN THE FIELD PRIOR TO DESIGN AND CONSTRUCTION. THIS INVENTORY IS BASED ON INFORMATION SUPPLIED BY THE TOWN OF HARTFORD AND IS NOT WARRANTED TO BE EXACT OR COMPLETE.



REVISION NO.	DATE	DESCRIPTION	MADE BY	CHECKED BY	APPROVED BY

WATER MAIN INVENTORY FOR
DOWNTOWN REVITALIZATION
 WHITE RIVER JUNCTION, VERMONT

PATHWAYS CONSULTING, LLC
 240 MESHANG STREET, SUITE 100
 LEBANON, NEW HAMPSHIRE 03766
 (603) 448-2200

SCALE: 1" = 100'
 DESIGNED BY:
 DRAWN BY: AMM
 CHECKED BY: MPM
 DATE: 01/16/09
 PROJ. NO. 11538

3
 SHEET 3 OF 4



REVISION NO.	DATE	DESCRIPTION	MADE BY	CHECKED BY	APPROVED BY

SEWER NETWORK INVENTORY FOR
DOWNTOWN REVITALIZATION
 WHITE RIVER JUNCTION, VERMONT

PATHWAYS CONSULTING, LLC
 240 MECHANIC STREET, SUITE 100
 LEBANON, NEW HAMPSHIRE 03766
 (603) 448-2200

SCALE: 1" = 100'
 DESIGNED BY:
 DRAWN BY: ANM
 CHECKED BY: MPM
 DATE: 07/16/09
 PROJ. NO. 11538
 SHEET 4 OF 4



CIP Cost Estimates

North Main Street

North Main Street Improvements				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	
Water Main Construction				
			Subtotal	\$0.00
Stormwater Construction				
12" PVC Drain Pipe Extension	40 lf	\$60.00 /lf		\$2,400.00
4' Catchbasin w/ Frame and Grate	5 ea	\$2,600.00 /ea		\$13,000.00
Remove Existing Catchbasin	4 ea	\$1,500.00 /ea		\$6,000.00
Replace/Relocate Hydrant	2 ea	\$3,600.00 /ea		\$7,200.00
Miscellaneous Work	1 ea	\$2,000.00 /ea		\$2,000.00
			Subtotal	\$30,600.00
Sewer Main Construction				
			Subtotal	\$0.00
Misc				
			Subtotal	\$0.00
			Construction Subtotal	\$30,600.00
			25% Contingency (includes mobilization & traffic control)	\$7,650.00
			15% Engineering/Planning/Design	\$4,590.00
			10% Municipal Oversight	\$3,060.00
			5% Construction Inspection	\$1,530.00
TOTAL				\$47,430.00

NARRATIVE:

Considerations for costs include:

- These costs are conceptual in nature and intended only for planning purposes. A full engineering design is necessary to accurately evaluate total project costs.
- Contingency is 25% because of likely issues in construction and traffic control.
- Assume that improvements to infrastructure are consistent with the conceptual design for streetscape improvements as presented by Resource Systems Group plan, dated 12/10/08.
- Where necessary, CB relocation will consist of removing existing CB and replacing with new CB in the proposed location. Additional drain line will be included in the estimated cost based on the assumption that the cost is limited to the additional length, not replacing existing drain line.
- Where new CBs are necessary, assume the placement of the CB and length to the nearest CB or DMH.
- Assume that cost for paving/overlay is included in streetscape costs.
- Assume that the street improvements will not result in need to alter or relocate existing overhead or underground electrical or communications utilities. Further engineering design and analysis will be necessary to determine if proposed improvements will affect these utilities.
- Estimate of probable costs for utilities does not include consideration of re-routing overhead utilities along new alignments or underground conduits.
- Relocating and/or placing existing overhead power and communications underground (e.g. cable television, telephone, high-speed internet, fire safety) is a relatively complex issue that needs to be addressed on a case-by-case basis.
- This preliminary engineer's opinion of probable cost does not include other site/civil costs, which may include site design, permitting, layout, grading, roadway paving, sidewalk construction, and hardscape.

North Main Street (Church St to S. Main St)				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	
DEMOLITION/SITE PREPARATION				
Excavation of surfaces & pavements	360 cy	\$15.00 cy		\$5,404
			Subtotal	\$5,404
SIDEWALK				
5" concrete sidewalk w/ granite curb	515 lf	\$120.00 lf		\$61,800
8" concrete sidewalk w/ granite curb	200 lf	\$140.00 lf		\$28,000
			Subtotal	\$89,800
ROADWAY/PARKING				
Asphalt - On-Street Parking	165 ton	\$65.00 ton		\$10,725
Crushed Stone Subbase- On-Street Parking	141 cy	\$25.00 cy		\$3,521
Granite Curbing	250 lf	\$25.00 lf		\$6,250
			Subtotal	\$20,496
SIGNS & STRIPING				
Crosswalk Striping - Thermoplastic	79 lf	\$7.00 lf		\$553
Signs - Parking, Crosswalk	5 ea	\$120.00 ea		\$600
Parking Striping - 4" Thermoplastic	175 lf	\$0.60 lf		\$105
			Subtotal	\$1,258
			Construction Subtotal	\$116,959
			20% Contingency (includes mobilization & traffic control)	\$23,392
			10% Engineering/Planning/Design	\$17,544
			10% Municipal Oversight	\$11,696
			5% Construction Inspection	\$11,696
TOTAL				\$181,286

NARRATIVE:

Costs include:

- excavation of existing asphalt, curbing, and earth on south side of North Main Street between Church Street and Currier Street to prepare for construction of new sidewalk, curbing, and on-street parking. (410 lf)
- subbase and asphalt for new parallel parking lane on south side of North Main Street between Church Street and Currier Street. (410 lf)
- new 5' concrete sidewalk with granite curb on south side of North Main Street between Church Street and Currier Street (410 lf) and on north side of North Main Street between Tip Top building and Bridge Street. (240 lf)
- excavation of existing asphalt, curbing, and earth on both sides of North Main Street between Currier Street and South Main Street to narrow travel lane and create landscaped buffers between parking lane and sidewalk. (3,300 sf)
- excavation of existing asphalt and curbing at northwest corner of North Main Street/Bridge Street intersection to reduce curb radius turning onto North Main Street westbound. (540 sf)
- signs and striping for new crosswalks and on-street parking.

Notes:

These costs are conceptual in nature and intended only for planning purposes.
See Potential Infrastructure Improvements plan for specific locations and detail.

North Main Street				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	OPTIONAL PRICE
PLANTING				
Street trees in planting areas (3" -3.5" cal.)	10 ea.	\$750.00 ea.	\$7,500.00	\$500 for 2" - 2.5"
Street trees in tree grates (3" - 3.5" cal.)	4 ea.	\$750.00 ea.	\$3,000.00	\$500 for 2" - 2.5"
Structural Soil (15 c.y./tree in tree grate)	60 c.y.	\$100.00 c.y.	\$6,000.00	
Tree Grates (4' square)	4 ea.	\$1,000.00 ea.	\$4,000.00	
PLANTING TOTAL			\$20,500.00	
HARDSCAPE				
2' Wide Paver band in sidewalk - Additional	0 l.f.	\$10.00 l.f.		\$0.00
HARDSCAPE TOTAL				\$0.00
SITE FURNITURE				
Benches	2 ea.	\$1,200.00 ea.	\$2,400.00	
Bike racks	1 ea.	\$750.00 ea.	\$750.00	
Trash receptacles	1 ea.	\$1,000.00 ea.	\$1,000.00	
SITE FURNITURE TOTAL			\$4,150.00	
LIGHTING				
Relocate Street lights	6 ea.	\$2,000.00 ea.	\$12,000.00	
Street lights	6 ea.	\$5,000.00 ea.	\$30,000.00	
LIGHTING TOTAL			\$42,000.00	
Subtotal			\$66,650.00	
20% Contingency (includes mobilization & traffic control)			\$13,330.00	
10% Engineering/Planning/Design			\$6,665.00	
10% Municipal Oversight			\$6,665.00	
5% Construction Inspection			\$3,332.50	
TOTAL			\$96,642.50	

NARRATIVE:
 Costs include:
 -See Schematic Design + Development Plan for general description of potential improvements
 -Street trees to be located in planting areas where possible, tree grates where necessary
 -New streetlights to match existing
 -Site furniture- locations T.B.D.

Notes:
 1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.
 2. Street tree planting makes the most sense for areas in need of sidewalk replacement or completely new sidewalk. This would allow for the installation of Structural Soil under paving, which is expected to greatly enhance tree health and longevity. Sidewalk width from face of curb to building face should be 8'-2" minimum for sufficient pedestrian traffic zone. If adding trees to existing sidewalk that is not going to be completely removed, approximately 150 sf of concrete paving should be removed and replaced to allow for the installation of Structural Soil. At approximately \$6 / sf, this would represent an additional cost of \$900 / tree.
 3. Street Light installation makes the most sense in areas in need of sidewalk replacement, although trenching in some locations could potentially happen parallel to sidewalk in areas of asphalt paving. Costs for sidewalk replacement and patch + repair work is not represented here- further detailed study beyond the scope of this project would be required.

South Main Street

South Main Street (south of Gates Street)				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	
Water Main Construction				
12" DI Water Main	2,200 lf	\$200.00 /lf	\$440,000.00	
Allowance for Service Connections	25 ea	\$500.00 /ea	\$12,500.00	
New Hydrant Assembly	2 ea	\$3,600.00 /ea	\$7,200.00	
Allowance for Existing Hydrant Connections	2 ea	\$800.00 /ea	\$1,600.00	
Allowance for Misc Work	1 ls	\$5,000.00 /ls	\$15,000.00	
Subtotal			\$476,300.00	
Subtotal			\$0.00	
Subtotal			\$0.00	
Construction Subtotal			\$476,300.00	
25% Contingency (includes mobilization & traffic control)			\$119,075.00	
15% Engineering/Planning/Design			\$71,445.00	
10% Municipal Oversight			\$47,630.00	
5% Construction Inspection			\$23,815.00	
TOTAL			\$738,265.00	

NARRATIVE:
 Considerations for costs include:
 -These costs are conceptual in nature and intended only for planning purposes. A full engineering design is necessary to accurately evaluate total project costs.
 - Replacement of approx. 2,200 LF of 8" dia. water main with 12" dia. water main. Project scope includes construction of water main and abandoning existing mains in place. No removal of existing mains proposed in scope. Costs for water main placement based on input from Hartford DPW.
 - Contingency is 25% because of likely issues in construction and traffic control.
 - Assume replacement 50% of existing hydrants with new hydrants to account for age/condition of existing hydrants.
 - Allowance for an assumed number of new service connections (25) including curb stops within project area.

South Main Street (continued)

South Main Street (south of Gates Street)			
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE
DEMOLITION/SITE PREPARATION			
Excavation of surfaces & pavements	59 cy	\$15.00 cy	\$889
Subtotal			\$889
SIDEWALK			
5" concrete sidewalk w/ granite curb	270 lf	\$120.00 lf	\$32,400
8" concrete sidewalk w/ granite curb	50 lf	\$140.00 lf	\$7,000
Subtotal			\$39,400
Construction Subtotal			\$40,289
20% Contingency (includes mobilization & traffic control)			\$8,058
10% Engineering/Planning/Design			\$6,043
10% Municipal Oversight			\$4,029
5% Construction Inspection			\$4,029
TOTAL			\$62,448

NARRATIVE:
 Costs include:
 - excavation of existing deteriorated asphalt sidewalk and curbing and replace with new 5' concrete sidewalk and granite curb on west side of South Main Street south of the Legion building. (320 lf)

Notes:
 These costs are conceptual in nature and intended only for planning purposes.
 See Potential Infrastructure Improvements plan for specific locations and detail.

South Main Street				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	OPTIONAL PRICE
PLANTING				
Street trees in planting areas (3" - 3.5" cal.)	9 ea.	\$750.00 ea.	\$6,750.00	\$500 for 2" - 2.5"
Street trees in tree grates (3" - 3.5" cal.)	12 ea.	\$750.00 ea.	\$9,000.00	\$500 for 2" - 2.5"
Structural Soil (15 c.y./tree in tree grate)	180 c.y.	\$100.00 c.y.	\$18,000.00	
Tree Grates (4' square)	12 ea.	\$1,000.00 ea.	\$12,000.00	
PLANTING TOTAL			\$45,750.00	
HARDSCAPE				
2' Wide Paver band in sidewalk - Additional	0 lf.	\$10.00 lf.		\$0.00
HARDSCAPE TOTAL				\$0.00
SITE FURNITURE				
Benches	2 ea.	\$1,200.00 ea.	\$2,400.00	
Bike racks	1 ea.	\$750.00 ea.	\$750.00	
Trash receptacles	1 ea.	\$1,000.00 ea.	\$1,000.00	
SITE FURNITURE TOTAL			\$4,150.00	
LIGHTING				
Street lights	13 ea.	\$5,000.00 ea.	\$65,000.00	
LIGHTING TOTAL			\$65,000.00	
Subtotal			\$114,900.00	
20% Contingency (includes mobilization & traffic control)			\$22,980.00	
10% Engineering/Planning/Design			\$11,490.00	
10% Municipal Oversight			\$11,490.00	
5% Construction Inspection			\$5,745.00	
TOTAL			\$166,605.00	

NARRATIVE:
 Costs include:
 -See Schematic Design + Development Plan for general description of potential improvements
 -Street trees to be located in planting areas where possible, tree grates where necessary
 -New streetlights to match existing
 -Site furniture- locations T.B.D.

Notes:
 1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.
 2. Street tree planting makes the most sense for areas in need of sidewalk replacement or completely new sidewalk. This would allow for the installation of Structural Soil under paving, which is expected to greatly enhance tree health and longevity. Sidewalk width from face of curb to building face should be 8'-2" minimum for sufficient pedestrian traffic zone. If adding trees to existing sidewalk that is not going to be completely removed, approximately 150 sf of concrete paving should be removed and replaced to allow for the installation of Structural Soil. At approximately \$6 / sf, this would represent an additional cost of \$900 / tree.
 3. Street Light installation makes the most sense in areas in need of sidewalk replacement, although trenching in some locations could potentially happen parallel to sidewalk in areas of asphalt paving. Costs for sidewalk replacement and patch + repair work is not represented here- further detailed study beyond the scope of this project would be required.

Gates Main Street West

Gates Street (west of South Main St)			
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE
DEMOLITION/SITE PREPARATION			
Excavation of surfaces & pavements	47 cy	\$15.00 cy	\$702
Subtotal			\$702
SIDEWALK			
5" concrete sidewalk w/ granite curb (5' width)	40 lf	\$120.00 lf	\$4,800
5" concrete sidewalk w/ granite curb (10' width)	180 lf	\$160.00 lf	\$28,800
8" concrete sidewalk w/ granite curb	40 lf	\$140.00 lf	\$5,600
Subtotal			\$39,200
ROADWAY/PARKING			
Granite Curbing	40 lf	\$25.00 lf	\$1,000
Subtotal			\$1,000
SIGNS & STRIPING			
Crosswalk Striping - Thermoplastic	120 lf	\$7.00 lf	\$840
Signs - Parking, Crosswalk	4 ea	\$120.00 ea	\$480
Subtotal			\$1,320
Construction Subtotal			\$42,222
20% Contingency (includes mobilization & traffic control)			\$8,444
10% Engineering/Planning/Design			\$6,333
10% Municipal Oversight			\$4,222
5% Construction Inspection			\$4,222
TOTAL			\$65,444

NARRATIVE:
 Costs include:
 - excavate existing asphalt in front of Miller Auto and west of Currier Street and replace with new 10' concrete sidewalk with granite curb in front of Miller Auto (180 lf) and a new 5' sidewalk west of Currier Street on south side of Gates Street. (80 lf)
 - new/replace crosswalk striping at Gates / Currier Street intersection.

Notes:
 These costs are conceptual in nature and intended only for planning purposes.
 See Potential Infrastructure Improvements plan for specific locations and detail.

Gates Main Street West (Continued)

Gates Street (west of South Main St)				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	OPTIONAL PRICE
PLANTING				
Street trees in planting areas (3"-3.5" cal.)	0 ea.	\$750.00 ea.	\$0.00	\$500 for 2" - 2.5"
Street trees in tree grates (3"-3.5" cal.)	8 ea.	\$750.00 ea.	\$6,000.00	\$500 for 2" - 2.5"
Structural Soil (15 c.y./tree in tree grate)	90 c.y.	\$100.00 c.y.	\$9,000.00	
Tree Grates (4' square)	6 ea.	\$1,000.00 ea.	\$6,000.00	
PLANTING TOTAL			\$21,000.00	
HARDSCAPE				
2' Wide Paver band in sidewalk - Additional	190 l.f.	\$10.00 l.f.		\$1,900.00
HARDSCAPE TOTAL				\$1,900.00
SITE FURNITURE				
Benches	2 ea.	\$1,200.00 ea.	\$2,400.00	
Bike racks	2 ea.	\$750.00 ea.	\$1,500.00	
Trash receptacles	2 ea.	\$1,000.00 ea.	\$2,000.00	
SITE FURNITURE TOTAL			\$5,900.00	
LIGHTING				
Street lights	2 ea.	\$5,000.00 ea.	\$10,000.00	
LIGHTING TOTAL			\$10,000.00	
Subtotal			\$38,800.00	
20% Contingency (includes mobilization & traffic control)			\$7,760.00	
10% Engineering/Planning/Design			\$3,880.00	
10% Municipal Oversight			\$3,880.00	
5% Construction Inspection			\$1,940.00	
TOTAL			\$56,260.00	

NARRATIVE:

Costs include:

- See Schematic Design + Development Plan for general description of potential improvements
- Street trees to be located in planting areas where possible, tree grates where necessary
- 2 replacement street trees for north side of Gates
- New streetlights to match existing
- Site furniture- locations T.B.D.

Notes:

1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.
2. Street tree planting makes the most sense for areas in need of sidewalk replacement or completely new sidewalk. This would allow for the installation of Structural Soil under paving, which is expected to greatly enhance tree health and longevity. Sidewalk width from face of curb to building face should be 8'-2" minimum for sufficient pedestrian traffic zone. If adding trees to existing sidewalk that is not going to be completely removed, approximately 150 sf of concrete paving should be removed and replaced to allow for the installation of Structural Soil. At approximately \$6 / sf, this would represent an additional cost of \$900 / tree.
3. Optional 2' wide paver band in sidewalk- this decorative detail along curb would allow for potential access to underground utilities. Its application would depend upon likelihood of adjacent sidewalks receiving the same treatment (for aesthetic consistency). Price represents additional cost above baseline concrete sidewalk cost.

Gates Street East

Gates Street (east of South Main St)				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	
Water Main Construction				
8" DI Water Main	150 lf	\$200.00 /lf	\$30,000.00	
Allowance for Service Connections	4 ea	\$500.00 /ea	\$2,000.00	
New Hydrant Assembly	0 ea	\$3,600.00 /ea	\$0.00	
Allowance for Existing Hydrant Connections	0 ea	\$800.00 /ea	\$0.00	
Allowance for Misc Work	1 ls	\$1,500.00 /ls	\$2,000.00	
Subtotal			\$34,000.00	
Subtotal			\$0.00	
Subtotal			\$0.00	
Construction Subtotal			\$34,000.00	
25% Contingency (includes mobilization & traffic control)			\$8,500.00	
15% Engineering/Planning/Design			\$5,100.00	
10% Municipal Oversight			\$3,400.00	
5% Construction Inspection			\$1,700.00	
TOTAL			\$52,700.00	

NARRATIVE:

Considerations for costs include:

- These costs are conceptual in nature and intended only for planning purposes. A full engineering design is necessary to accurately evaluate total project costs.
- Construction of approx. 150 LF of 6" dia. water main. Project scope includes construction of water main and abandoning existing mains/services in place. No removal of existing mains/services proposed in scope.
- Contingency is 25% because of likely issues in construction and traffic control.
- Allowance for an assumed number of new service connections including curb stops within project area.

Gates Street East (continued)

Gates Street east of South Main Street			
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE
DEMOLITION/SITE PREPARATION			
Excavation of surfaces & pavements	600 cy	\$15.00 cy	\$9,000
			Subtotal \$9,000
SIDEWALK			
5" concrete sidewalk w/ granite curb (5' width)	185 lf	\$120.00 lf	\$22,200
5" concrete sidewalk w/ granite curb (10' width)	150 lf	\$160.00 lf	\$24,000
			Subtotal \$46,200
ROADWAY RECONSTRUCTION/PARKING			
Asphalt - 6" wearing + base course	200 ton	\$65.00 ton	\$13,000
Crushed Stone - 18" subbase	300 cy	\$25.00 cy	\$7,500
			Subtotal \$20,500
SIGNS & STRIPING			
Crosswalk Striping - Thermoplastic	20 lf	\$7.00 lf	\$140
Signs - Parking, Crosswalk, Directional	4 ea	\$120.00 ea	\$480
Parking Striping - 4" Thermoplastic	100 lf	\$0.60 lf	\$60
			Subtotal \$680
			Construction Subtotal \$76,380
20% Contingency (includes mobilization & traffic control)			\$15,276
10% Engineering/Planning/Design			\$11,457
10% Municipal Oversight			\$7,638
5% Construction Inspection			\$7,638
TOTAL			\$118,389

NARRATIVE:

Costs include:

- excavation of existing asphalt and curbing to prepare for construction of sidewalks, planters, curb extensions, and full-depth reconstruction of Gates Street. (600 cy)
- new concrete sidewalk with granite curb and planters on both sides of Gates Street.
- new concrete bulb outs with granite curbing at Gates/S. Main St intersection
- signs and striping for new crosswalks, parking area, and directional warning signage at Gates/S. Main St intersection.

Notes:
These costs are conceptual in nature and intended only for planning purposes.

See Potential Infrastructure Improvements plan for specific locations and detail.

Gates Street east of South Main Street				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	OPTIONAL PRICE
PLANTING				
Street trees in planting areas (3"-3.5" cal.)	0 ea.	\$750.00 ea.	\$0.00	\$500 for 2" - 2.5"
Street trees in tree grates (3"-3.5" cal.)	0 ea.	\$750.00 ea.	\$0.00	\$500 for 2" - 2.5"
Structural Soil (15 c.y./tree in tree grate)	0 c.y.	\$100.00 c.y.	\$0.00	
Tree Grates (4' square)	0 ea.	\$1,000.00 ea.	\$0.00	
			PLANTING TOTAL	\$0.00
HARDSCAPE				
2' Wide Paver band in sidewalk - Additional	220 l.f.	\$10.00 l.f.	\$2,200.00	
			HARDSCAPE TOTAL	\$2,200.00
SITE FURNITURE				
Benches	1 ea.	\$1,200.00 ea.	\$1,200.00	
Bike racks	1 ea.	\$750.00 ea.	\$750.00	
Trash receptacles	1 ea.	\$1,000.00 ea.	\$1,000.00	
			SITE FURNITURE TOTAL	\$2,950.00
LIGHTING				
Street lights	1 ea.	\$5,000.00 ea.	\$5,000.00	
			LIGHTING TOTAL	\$5,000.00
			Subtotal	\$10,150.00
20% Contingency (includes mobilization & traffic control)			\$2,030.00	
10% Engineering/Planning/Design			\$1,015.00	
10% Municipal Oversight			\$1,015.00	
5% Construction Inspection			\$507.50	
TOTAL			\$14,717.50	

NARRATIVE:

Costs include:

- See Schematic Design + Development Plan for general description of potential improvements
- Street trees to be located in planting areas where possible, tree grates where necessary
- New streetlights to match existing
- Site furniture- locations T.B.D.

Notes:

1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.
2. Street tree planting makes the most sense for areas in need of sidewalk replacement or completely new sidewalk. This would allow for the installation of Structural Soil under paving, which is expected to greatly enhance tree health and longevity. Sidewalk width from face of curb to building face should be 8'-2" minimum for sufficient pedestrian traffic zone.
3. Optional 2' wide paver band in sidewalk- this decorative detail along curb would allow for potential access to underground utilities. Its application would depend upon likelihood of adjacent sidewalks receiving the same treatment (for aesthetic consistency). Price represents additional cost above baseline concrete sidewalk cost.

Currier Street (continued)

Currier Street (noth of Gates St)				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	OPTIONAL PRICE
PLANTING				
Street trees in planting areas (3"- 3.5" cal.)	0 ea.	\$750.00 ea.	\$0.00	\$500 for 2" - 2.5"
Street trees in tree grates (3"-3.5" cal.)	0 ea.	\$750.00 ea.	\$0.00	\$500 for 2" - 2.5"
Structural Soil (15 c.y./tree in tree grate)	0 c.y.	\$100.00 c.y.	\$0.00	
Tree Grates (4' square)	0 ea.	\$1,000.00 ea.	\$0.00	
Green Wall (vines)	3 ea.	\$16.00 ea.	\$48.00	
PLANTING TOTAL			\$48.00	
HARDSCAPE				
2' Wide Paver band in sidewalk - Additional	0 l.f.	\$10.00 l.f.		\$0.00
HARDSCAPE TOTAL				\$0.00
SITE FURNITURE				
Benches	0 ea.	\$1,200.00 ea.	\$0.00	
Bike racks	0 ea.	\$750.00 ea.	\$0.00	
Trash receptacles	0 ea.	\$1,000.00 ea.	\$0.00	
SITE FURNITURE TOTAL				\$0.00
LIGHTING				
Street lights	4 ea.	\$5,000.00 ea.	\$20,000.00	
LIGHTING TOTAL			\$20,000.00	
Subtotal			\$20,048.00	
20% Contingency (includes mobilization & traffic control)			\$4,009.60	
10% Engineering/Planning/Design			\$2,004.80	
10% Municipal Oversight			\$2,004.80	
5% Construction Inspection			\$1,002.40	
TOTAL			\$29,069.60	

NARRATIVE:
 Costs include:
 -See Schematic Design + Development Plan for general description of potential improvements
 -Street trees to be located in planting areas where possible, tree grates where necessary
 -New streetlights to match existing
 -Site furniture- locations T.B.D.

Notes:
 1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.
 2. Street tree planting makes the most sense for areas in need of sidewalk replacement or completely new sidewalk. This would allow for the installation of Structural Soil under paving, which is expected to greatly enhance tree health and longevity. Sidewalk width from face of curb to building face should be 8'-2" minimum for sufficient pedestrian traffic zone.
 3. Street Light installation makes the most sense in areas in need of sidewalk replacement, although trenching in some locations could potentially happen parallel to sidewalk in areas of asphalt paving. Costs for sidewalk replacement and patch + repair work is not represented here- further detailed study beyond the scope of this project would be required.

Currier Street Extension

Currier Street Extension				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	
Water Main Construction				
8" DI Water Main	250 lf	\$90.00 /lf	\$22,500.00	
Allowance for Service Connections	0 ea	\$500.00 /ea	\$0.00	
New Hydrant Assembly	1 ea	\$3,600.00 /ea	\$3,600.00	
Allowance for Existing Hydrant Connections	0 ea	\$800.00 /ea	\$0.00	
Allowance for Misc Work	1 ls	\$2,000.00 /ls	\$5,000.00	
Subtotal			\$31,100.00	
Stormwater Construction				
Subtotal			\$0.00	
Sewer Main Construction				
Subtotal			\$0.00	
Construction Subtotal			\$31,100.00	
25% Contingency (includes mobilization & traffic control)			\$7,775.00	
15% Engineering/Planning/Design			\$4,665.00	
10% Municipal Oversight			\$3,110.00	
5% Construction Inspection			\$1,555.00	
TOTAL			\$48,205.00	

NARRATIVE:
 Considerations for costs include:
 -These costs are conceptual in nature and intended only for planning purposes. A full engineering design is necessary to accurately evaluate total project costs.
 - Construction of water main intended to connect from Gates St to the proposed Miller Auto/Legion Lot development site water main. This will facilitate a water main loop to benefit the overall water distribution in the downtown.
 - Contingency is 25% because of likely issues in construction and traffic control.
 - No new utility service connections are necessary for the project work.
 - Assume that the existing stormwater network along Currier St Ext remains in use after reconstruction of the extension.
 - Assume sewer service is not necessary along this extension. Development of the Miller Auto/Legion Lot area will discharge sewer flows directly toward South Main St.

Currier Street Extension				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	OPTIONAL PRICE
PLANTING				
Street trees in planting area (3"-3.5" cal.)	3 ea.	\$750.00 ea.	\$2,250.00	\$500 for 2" - 2.5"
Street trees in tree grates (3"-3.5" cal.)	8 ea.	\$750.00 ea.	\$6,000.00	\$500 for 2" - 2.5"
Structural Soil (15 c.y./tree in tree grate)	45 c.y.	\$100.00 c.y.	\$4,500.00	
Tree Grates (4' square)	8 ea.	\$1,000.00 ea.	\$8,000.00	
PLANTING TOTAL			\$20,750.00	
HARDSCAPE				
2' Wide Paver band in sidewalk - Additional	1200 l.f.	\$10.00 l.f.		\$12,000.00
HARDSCAPE TOTAL				\$12,000.00
SITE FURNITURE				
Benches	0 ea.	\$1,200.00 ea.	\$0.00	
Trash receptacles	0 ea.	\$1,000.00 ea.	\$0.00	
SITE FURNITURE TOTAL			\$0.00	
LIGHTING				
Street lights	10 ea.	\$5,000.00 ea.	\$50,000.00	
LIGHTING TOTAL			\$50,000.00	
Subtotal			\$82,750.00	
20% Contingency (includes mobilization & traffic control)			\$16,550.00	
10% Engineering/Planning/Design			\$8,275.00	
10% Municipal Oversight			\$8,275.00	
5% Construction Inspection			\$4,137.50	
TOTAL			\$119,987.50	

NARRATIVE:
 Costs include:
 -See Schematic Design + Development Plan for general description of potential improvements
 -Street trees to be located in planting areas where possible, tree grates where necessary
 -New streetlights to match existing
 -Site furniture- locations T.B.D.

Notes:
 1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.
 2. Street tree planting makes the most sense for areas in need of sidewalk replacement or completely new sidewalk. This would allow for the installation of Structural Soil under paving, which is expected to greatly enhance tree health and longevity. Sidewalk width from face of curb to building face should be 8'-2" minimum for sufficient pedestrian traffic zone.
 3. 2' wide paver band in sidewalk- this decorative detail along curb would allow for potential access to underground utilities. Its application would depend upon likelihood of adjacent sidewalks receiving the same treatment (for aesthetic consistency).

Bridge Street

Bridge Street			
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE
DEMOLITION/SITE PREPARATION			
Excavation of surfaces & pavements	50 cy	\$15.00 cy	\$750
Subtotal			\$750
ROADWAY/PARKING			
Granite Curbing	162 lf	\$25.00 lf	\$4,050
Subtotal			\$4,050
Construction Subtotal			\$4,800
20% Contingency (includes mobilization & traffic control)			\$960
10% Engineering/Planning/Design			\$720
10% Municipal Oversight			\$480
5% Construction Inspection			\$480
TOTAL			\$7,440

NARRATIVE:
 Costs include:
 - excavation of asphalt surface in preparation for new curbed island in front of old ProCam building. (50 cy)
 - other sidewalk and roadway improvements to be accomodated under upcoming RR underpass construction project.

Notes:
 These costs are conceptual in nature and intended only for planning purposes.
 See Potential Infrastructure Improvements plan for specific locations and detail.

Bridge Street				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	OPTIONAL PRICE
PLANTING				
Street trees (in planting areas)	4 ea.	\$750.00 ea.	\$3,000.00	\$500 for 2" - 2.5"
Street trees (in tree grates)	0 ea.	\$750.00 ea.	\$0.00	\$500 for 2" - 2.5"
Structural Soil (15 c.y./tree in tree grate)	0 c.y.	\$100.00 c.y.	\$0.00	
Tree Grates (4' square)	0 ea.	\$1,000.00 ea.	\$0.00	
Lawn (seeded)	2,485 s.f.	\$0.12 s.f.	\$298.20	
PLANTING TOTAL			\$3,298.20	
SITE FURNITURE				
Benches	0 ea.	\$1,200.00 ea.	\$0.00	
Trash receptacles	0 ea.	\$1,000.00 ea.	\$0.00	
SITE FURNITURE TOTAL			\$0.00	
LIGHTING				
Street lights	0 ea.	\$5,000.00 ea.	\$0.00	
LIGHTING TOTAL			\$0.00	
Subtotal			\$3,298.20	
20% Contingency (includes mobilization & traffic control)			\$659.64	
10% Engineering/Planning/Design			\$329.82	
10% Municipal Oversight			\$329.82	
5% Construction Inspection			\$164.91	
TOTAL			\$4,782.39	

NARRATIVE:
 Costs include:
 -See Schematic Design + Development Plan for general description of potential improvements
 -Street trees to be located in planting areas where possible, tree grates where necessary
 -New streetlights to match existing
 -Site furniture- locations T.B.D.

Notes:
 1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.

Downtown Park & Adjacent Parking Lot

Downtown Park & Adjacent Parking Lot Improvements			
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE
DEMOLITION/SITE PREPARATION			
Excavation of surfaces & pavements	1,250 cy	\$15.00 cy	\$18,750
			Subtotal \$18,750
SIDEWALK/TRANSIT			
5" concrete sidewalk w/ granite curb (5' width)	300 lf	\$120.00 lf	\$36,000
Granite Curbing	330 lf	\$25.00 lf	\$8,250
Bus Shelter	1 ea	\$15,000.00 ea	\$15,000
			Subtotal \$59,250
ROADWAY/PARKING			
Asphalt - 2" Overlay	100 ton	\$65.00 ton	\$6,500
			Subtotal \$6,500
SIGNS & STRIPING			
Crosswalk Striping - Thermoplastic	40 lf	\$7.00 lf	\$280
Signs - Parking, Crosswalk, Directional	4 ea	\$120.00 ea	\$480
Parking Striping - 4" Thermoplastic	250 lf	\$0.60 lf	\$150
			Subtotal \$910
			Construction Subtotal \$85,410
20% Contingency (includes mobilization & traffic control)			\$17,082
10% Engineering/Planning/Design			\$12,812
10% Municipal Oversight			\$8,541
5% Construction Inspection			\$8,541
TOTAL			\$132,386

NARRATIVE:

Costs include:

- excavation of existing asphalt, curbing, and earth to prepare for construction of park, reconfigured parking, circulation lanes, and curb extensions. (1,250 cy)

- new 5' sidewalk with granite curbing around post office building and around new parking area.

- 2" asphalt overlay along Gates Street and within reconfigured parking area. (600 cy)

- new granite curbing along South Main Street adjacent to new park

- new Advance Transit bus shelter on northeast corner of Post Office building.

- new concrete bulb outs with granite curbing (5) at Gates/S. Main St intersection and within circulating driveway around post office.

- signs and striping for new crosswalks, parking area, and directional warning signage at Gates/S. Main St intersection.

Notes:

These costs are conceptual in nature and intended only for planning purposes.

See Potential Infrastructure Improvements plan for specific locations and detail.

Downtown Park & Adjacent Parking Lot Improvements- Option A			
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE
PLANTING			
Trees in planting (3" - 3.5" cal.)	3 ea.	\$750.00 ea.	\$2,250.00
Trees requiring structural soil (3" - 3.5" cal.)	4 ea.	\$750.00 ea.	\$3,000.00
Structural Soil (15 c.y./tree in paving)	60 c.y.	\$100.00 c.y.	\$6,000.00
Shrubs (3 gallon)	40 ea.	\$55.00 ea.	\$2,200.00
Perennials at 18" o.c. (1 gal. @ 18" o.c.)	324 s.f.	\$7.50 s.f.	\$2,430.00
Lawn (sod)	4925 s.f.	\$1.00 s.f.	\$4,925.05
			PLANTING TOTAL \$20,805.05
HARDSCAPE			
Concrete paving	2400 s.f.	\$6.00 s.f.	\$14,400.00
Concrete pavers	5259 s.f.	\$14.00 s.f.	\$73,626.42
2' high stone seatwall	215 l.f.	\$300.00 l.f.	\$64,500.00
			HARDSCAPE TOTAL \$152,526.42
SITE FURNITURE			
Benches	7 ea.	\$1,200.00 ea.	\$8,400.00
Bike racks	1 ea.	\$750.00 ea.	\$750.00
Trash receptacles	2 ea.	\$1,000.00 ea.	\$2,000.00
			SITE FURNITURE TOTAL \$11,150.00
LIGHTING			
Relocate street lights	3 ea.	\$2,000.00 ea.	\$6,000.00
Street lights (for parking area)	3 ea.	\$5,000.00 ea.	\$15,000.00
Pedestrian scale lights (bollards)	5 ea.	\$1,500.00 ea.	\$7,500.00
			LIGHTING TOTAL \$28,500.00
WAYFINDING/SIGNAGE			
Interpretative Signs	2 ea.	\$2,500.00 ea.	\$5,000.00
Kiosk	1 ea.	\$14,000.00 ea.	\$14,000.00
			WAYFINDING / SIGNAGE TOTAL \$19,000.00
PUBLIC ART			
Fountain / sculpture (allowance)	1 ea.	\$20,000.00 ea.	\$20,000.00
			PUBLIC ART TOTAL \$20,000.00
STRUCTURES			
Community building	ea.	ea.	\$0.00
Pedestrian bridge	ea.	ea.	\$0.00
Transit center	ea.	ea.	\$0.00
			STRUCTURES TOTAL \$0.00
			Subtotal \$251,981.47
20% Contingency (includes mobilization & traffic control)			\$50,396.29
10% Engineering/Planning/Design			\$25,198.15
10% Municipal Oversight			\$25,198.15
5% Construction Inspection			\$12,599.07
TOTAL			\$365,373.13

NARRATIVE:

Costs include:

-See Downtown Urban Plaza / Park, Schematic Site Plan Option A, for general description of potential improvements

Notes:

1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.

Downtown Park & Adjacent Parking Lot Improvements- Option B				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	
PLANTING				
Trees in planting (3" - 3.5" cal.)	4 ea.	\$750.00 ea.	\$3,000.00	
Trees requiring structural soil (3" -3.5" cal.)	3 ea.	\$750.00 ea.	\$2,250.00	
Structural Soil (15 c.y./tree in paving)	45 c.y.	\$100.00 c.y.	\$4,500.00	
Shrubs (3 gallon)	0 ea.	\$55.00 ea.	\$0.00	
Perennials (1 gal. @ 18" o.c.)	245 s.f.	\$7.50 s.f.	\$1,837.50	
Lawn (sod)	2579 s.f.	\$1.00 s.f.	\$2,578.92	
PLANTING TOTAL			\$14,166.42	
HARDSCAPE				
Concrete paving	5135 s.f.	\$6.00 s.f.	\$30,810.00	
Concrete pavers	6466 s.f.	\$14.00 s.f.	\$90,523.44	
2' high stone seatwall	120 l.f.	\$300.00 l.f.	\$36,000.00	
HARDSCAPE TOTAL			\$157,333.44	
SITE FURNITURE				
Benches	7 ea.	\$1,200.00 ea.	\$8,400.00	
Bike racks	2 ea.	\$750.00 ea.	\$1,500.00	
Trash receptacles	3 ea.	\$1,000.00 ea.	\$3,000.00	
SITE FURNITURE TOTAL			\$12,900.00	
LIGHTING				
Relocate street lights	3 ea.	\$2,000.00 ea.	\$6,000.00	
Street lights (for parking area)	3 ea.	\$5,000.00 ea.	\$15,000.00	
Pedestrian scale lights (bollards)	5 ea.	\$1,500.00 ea.	\$7,500.00	
LIGHTING TOTAL			\$28,500.00	
WAYFINDING/SIGNAGE				
Interpretative Signs	2 ea.	\$2,500.00 ea.	\$5,000.00	
Kiosk	1 ea.	\$14,000.00 ea.	\$14,000.00	
WAYFINDING / SIGNAGE TOTAL			\$19,000.00	
PUBLIC ART				
Fountain / sculpture (allowance)	0 ea.	\$20,000.00 ea.	\$0.00	
PUBLIC ART TOTAL			\$0.00	
STRUCTURES				
Community building	ea.	-	ea.	\$0.00
Pedestrian bridge	ea.	-	ea.	\$0.00
Transit center	ea.	-	ea.	\$0.00
STRUCTURES TOTAL			\$0.00	
Subtotal			\$231,899.86	
20% Contingency (includes mobilization & traffic control)			\$46,379.97	
10% Engineering/Planning/Design			\$23,189.99	
10% Municipal Oversight			\$23,189.99	
5% Construction Inspection			\$11,594.99	
TOTAL				\$336,254.80

NARRATIVE:

Costs include:

-See Downtown Urban Plaza / Park, Schematic Site Plan Option B, for general description of potential improvements

Notes:

1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.
2. Costs for structures have not been provided- more detailed architectural studies would be necessary to evaluate these costs.

Miller Auto/ Legion Lot

Miller Auto / Legion Lot				
ITEM	SIZE/ QUANTITY		UNIT PRICE (installed)	TOTAL PRICE
Water Main Construction				
8" DI Water Main	800 lf		\$90.00 /lf	\$72,000.00
Allowance for Service Connections	4 ea		\$500.00 /ea	\$2,000.00
New Hydrant Assembly	2 ea		\$3,600.00 /ea	\$7,200.00
Allowance for Existing Hydrant Connections	0 ea		\$800.00 /ea	\$0.00
			Subtotal	\$81,200.00
Stormwater Construction				
12" HDPE Drain Pipe	800 lf		\$60.00 /lf	\$48,000.00
4' Catchbasin w/ Frame and Grate	6 ea		\$2,600.00 /ea	\$15,600.00
			Subtotal	\$63,600.00
Sewer Main Construction				
12" PVC Sewer Pipe	400 lf		\$60.00 /lf	\$24,000.00
4' Sewer Manhole with Grate	2 ea		\$3,500.00 /ea	\$7,000.00
			Subtotal	\$31,000.00
Misc				
Allowance for Misc Work	1 ls		\$5,000.00 /ls	\$15,000.00
			Subtotal	\$15,000.00
			Construction Subtotal	\$190,800.00
			25% Contingency (includes mobilization & traffic control)	\$47,700.00
			15% Engineering/Planning/Design	\$28,620.00
			10% Municipal Oversight	\$19,080.00
			5% Construction Inspection	\$9,540.00
TOTAL				\$295,740.00

NARRATIVE:

Considerations for costs include:

- These costs are conceptual in nature and intended only for planning purposes. A full engineering design is necessary to accurately evaluate total project costs.
- Construction of water main intended to connect from Gates St to the proposed Miller Auto/Legion Lot development site water main. This will facilitate a water main loop to benefit the overall water distribution in the downtown.
- Contingency is 25% because of likely issues in construction and traffic control.
- No new utility service connections are necessary for the project work.
- Assume that the existing stormwater network along Currier St Ext remains in use after reconstruction of the extension.
- Assume sewer service is not necessary along this extension. Development of the Miller Auto/Legion Lot area will discharge sewer flows directly toward South Main St.
- Redevelopment of this area will include on-site stormwater treatment and/or detention facilities. This preliminary engineer's opinion of probable costs does not include on-site facilities, only limited allowance for the drainage network to route post-development stormwater flows from the site to the existing stormwater network.
- Estimate of probable costs for utilities does not include consideration of re-routing overhead utilities along new alignments or to underground conduits. Placing overhead power and communications (e.g. cable television, telephone, high-speed internet, fire safety) underground is a relatively complex issue that needs to be addressed on a case-by-case basis. A project of this scale in the area proposed may require a commitment of millions of dollars to place these utilities underground.
- Conceptual design of utilities does not substantially change among the four major development scenarios for this project area.
- This preliminary engineer's opinion of probable cost does not include other site/civil costs, which may include site design, permitting, layout, grading, roadway paving, sidewalk construction, and hardscape.

Miller Auto / Legion Lot Site - Option A				Date: 12/10/08
ITEM	SIZE/ QUANTITY		UNIT PRICE (installed)	TOTAL PRICE
DEMOLITION/SITE PREPARATION				
Excavation of surfaces & pavements	4,115 cy		\$15.00 cy	\$61,728
Common excavation	1,000 cy		\$7.50 cy	\$7,500
Retaining Wall - Interlocking Concrete Block	4,000 sf		\$20.00 sf	\$80,000
			Subtotal	\$149,228
SIDEWALK				
5" concrete sidewalk w/ granite curb (5' width)	1,200 lf		\$120.00 lf	\$144,000
5" concrete sidewalk w/ granite curb (10' width)	850 lf		\$160.00 lf	\$136,000
			Subtotal	\$280,000
ROADWAY/PARKING				
Asphalt - Roadway	1,240 ton		\$65.00 ton	\$80,600
Crushed Stone Subbase - Roadway	915 cy		\$25.00 cy	\$22,875
Asphalt - Parking Lot	1,700 ton		\$65.00 ton	\$110,500
Crushed Stone Subbase - Parking Lot	1,624 cy		\$25.00 cy	\$40,606
Granite Curbing	400 lf		\$25.00 lf	\$10,000
			Subtotal	\$264,581
SIGNS & STRIPING				
Crosswalk Striping - Thermoplastic	80 lf		\$7.00 lf	\$560
Signs - Parking, Crosswalk	20 ea		\$120.00 ea	\$2,400
Parking Striping - 4" Thermoplastic	5000 lf		\$0.60 lf	\$3,000
			Subtotal	\$5,960
			Construction Subtotal	\$699,768
			20% Contingency (includes mobilization & traffic control)	\$139,954
			10% Engineering/Planning/Design	\$104,965
			10% Municipal Oversight	\$69,977
			5% Construction Inspection	\$69,977
TOTAL				\$1,084,641

NARRATIVE:

Costs include:

- excavation of existing asphalt, curbing, and earth around Miller Auto site and in Legion Lot to prepare site for improvements.
- subbase and asphalt for new 28' wide roadway extension of Currier Street from Gates Street to South Main Street.
- new 10' concrete sidewalk with granite curb on both sides of Currier Street Extension, and new 5' sidewalk around reconstructed Legion Lot.
- subbase and asphalt for new 170 space parking lot
- new curbed islands in reconstructed Legion Lot
- signs and striping for parking area.
- new interlocking concrete block retaining wall along southern slope in Legion Lot.

Notes:

These costs are conceptual in nature and intended only for planning purposes. See Potential Infrastructure Improvements plan for specific locations and detail.

Miller Auto / Legion Lot, Option A			
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE
PLANTING			
Street trees in planting areas, (3" - 3.5" cal.)	15 ea.	\$750.00 ea.	\$11,250.00
Street trees in tree grates, (3" - 3.5" cal.)	9 ea.	\$750.00 ea.	\$6,750.00
Structural soil (15 c.y./tree in paving)	135 c.y.	\$100.00 c.y.	\$13,500.00
Tree Grates (4' square)	9 ea.	\$1,000.00 ea.	\$9,000.00
Lawn (seeded)	16011 s.f.	\$0.12 s.f.	\$1,921.33
PLANTING TOTAL			\$42,421.33
HARDSCAPE			
Excavation of surfaces & pavements	950 c.y.	\$15.00 c.y.	\$14,250.00
Concrete paving	16855 s.f.	\$6.00 s.f.	\$101,130.00
Concrete pavers	11149 s.f.	\$14.00 s.f.	\$156,087.54
HARDSCAPE TOTAL			\$257,217.54
SITE FURNITURE			
			\$528,685.08
Benches	12 ea.	\$1,200.00 ea.	\$14,400.00
Bike racks	3 ea.	\$750.00 ea.	\$2,250.00
Trash receptacles	5 ea.	\$1,000.00 ea.	\$5,000.00
SITE FURNITURE TOTAL			\$21,650.00
LIGHTING			
Pedestrian-scale lights	18 ea.	\$3,000.00 ea.	\$54,000.00
Parking lot lights	15 ea.	\$2,500.00 ea.	\$37,500.00
LIGHTING TOTAL			\$91,500.00
WAYFINDING/SIGNAGE			
Kiosk	1 ea.	\$14,000.00 ea.	\$14,000.00
WAYFINDING / SIGNAGE TOTAL			\$14,000.00
PUBLIC ART			
PUBLIC ART TOTAL			\$0.00
Construction Subtotal			\$426,788.87
20% Contingency (includes mobilization & traffic control)			\$85,357.77
10% Engineering/Planning/Design			\$42,678.89
10% Municipal Oversight			\$42,678.89
5% Construction Inspection			\$21,339.44
TOTAL			\$618,843.86

NARRATIVE:

Costs include:
See Miller Auto / Legion Lot Site, Schematic Site Plan Option A, for general description of potential improvements

Notes:

1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.
2. Costs not provided for new parking structures, demolition of existing buildings, and earthwork.

Miller Auto / Legion Lot Site - Option B			
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE
DEMOLITION/SITE PREPARATION			
Excavation of surfaces & pavements	4,115 cy	\$15.00 cy	\$61,728
Common excavation	250 cy	\$7.50 cy	\$1,875
Retaining Wall - Interlocking Concrete Block	1,000 sf	\$20.00 sf	\$20,000
Subtotal			\$83,603
SIDEWALK			
5" concrete sidewalk w/ granite curb (5' width)	600 lf	\$120.00 lf	\$72,000
5" concrete sidewalk w/ granite curb (10' width)	800 lf	\$160.00 lf	\$128,000
Subtotal			\$200,000
ROADWAY/PARKING			
Asphalt - Roadway	1,240 ton	\$65.00 ton	\$80,600
Crushed Stone Subbase - Roadway	915 cy	\$25.00 cy	\$22,875
Parking Deck	178 space	\$18,000.00 space	\$3,204,000
Subtotal			\$3,307,475
SIGNS & STRIPING			
Crosswalk Striping - Thermoplastic	80 lf	\$7.00 lf	\$560
Signs - Parking, Crosswalk	20 ea	\$120.00 ea	\$2,400
Parking Striping - 4" Thermoplastic	5000 lf	\$0.60 lf	\$3,000
Subtotal			\$5,960
Construction Subtotal			\$3,597,038
20% Contingency (includes mobilization & traffic control)			\$719,408
10% Engineering/Planning/Design			\$539,556
10% Municipal Oversight			\$359,704
5% Construction Inspection			\$359,704
TOTAL			\$5,575,409

NARRATIVE:

Costs include:

- excavation of existing asphalt, curbing, and earth around Miller Auto site and in Legion Lot to prepare site for improvements.
- subbase and asphalt for new 28' wide roadway extension of Currier Street from Gates Street to South Main Street.
- new 10' concrete sidewalk with granite curb on both sides of Currier Street Extension and new 5' concrete sidewalk to reconstructed Legion Lot.
- new 178 space parking deck (2 levels) in Legion Lot.
- signs and striping for parking area.
- new interlocking concrete block retaining wall along southern slope in Legion Lot.

Notes:

These costs are conceptual in nature and intended only for planning purposes.
See Potential Infrastructure Improvements plan for specific locations and detail.

Miller Auto/ Legion Lot, Option B				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)		TOTAL PRICE
PLANTING				
Street trees in planting areas (3"-3.5" cal.)	13 ea.	\$750.00 ea.		\$9,750.00
Street trees in tree grates (3" - 3.5" cal.)	7 ea.	\$750.00 ea.		\$5,250.00
Evergreen Trees (10' - 12'h)	11 ea.	\$600.00 ea.		\$6,600.00
Structural Soil (15 c.y./tree in paving)	105 c.y.	\$100.00 c.y.		\$10,500.00
Tree Grates (4' square)	7 ea.	\$1,000.00 ea.		\$7,000.00
Lawn (seeded)	29194 s.f.	\$0.12 c.f.		\$3,503.28
		PLANTING TOTAL		\$42,603.28
HARDSCAPE				
Excavation of surfaces and pavements	950 c.y.	15 c.y.		\$14,250.00
Concrete paving	11190 s.f.	\$6.00 s.f.		\$67,140.00
Concrete pavers	0 s.f.	\$14.00 s.f.		\$0.00
2' high concrete retaining wall (amphitheater)	400 l.f.	\$225.00 l.f.		\$90,000.00
7' wide concrete steps with metal handrails	85 l.f.	\$1,220.00 l.f.		\$103,700.00
		HARDSCAPE TOTAL		\$260,840.00
SITE FURNITURE				
Benches	10 ea.	\$1,200.00 ea.		\$12,000.00
Bike racks	2 ea.	\$750.00 ea.		\$1,500.00
Trash receptacles	5 ea.	\$1,000.00 ea.		\$5,000.00
		SITE FURNITURE TOTAL		\$18,500.00
LIGHTING				
Pedestrian-scale lights	15 ea.	\$3,000.00 ea.		\$45,000.00
Parking lot lights	10 ea.	\$2,500.00 ea.		\$25,000.00
		LIGHTING TOTAL		\$70,000.00
WAYFINDING/SIGNAGE				
Kiosk	1 ea.	\$14,000.00 ea.		\$14,000.00
		WAYFINDING / SIGNAGE TOTAL		\$14,000.00
PUBLIC ART				
		PUBLIC ART TOTAL		\$0.00
		Subtotal		\$405,943.28
		20% Contingency (includes mobilization & traffic control)		\$81,188.66
		10% Engineering/Planning/Design		\$40,594.33
		10% Municipal Oversight		\$40,594.33
		5% Construction Inspection		\$20,297.16
TOTAL				\$588,617.76

NARRATIVE:

Costs include:
See Miller Auto / Legion Lot Site, Schematic Site Plan Option B, for general description of potential improvements

- Notes:
1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.
2. Costs not provided for new parking structures, demolition of existing buildings, and earthwork.

Miller Auto / Legion Lot Site - Option C				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)		TOTAL PRICE
DEMOLITION/SITE PREPARATION				
Excavation of surfaces & pavements	4,500 cy	\$15.00 cy		\$67,500
Common excavation	1,500 cy	\$7.50 cy		\$11,250
Retaining Wall - Interlocking Concrete Block	5,000 sf	\$20.00 sf		\$100,000
		Subtotal		\$178,750
SIDEWALK				
5" concrete sidewalk w/ granite curb (5' width)	200 lf	\$120.00 lf		\$24,000
5" concrete sidewalk w/ granite curb (10' width)	800 lf	\$160.00 lf		\$128,000
		Subtotal		\$152,000
ROADWAY/PARKING				
Asphalt - Roadway	1,950 ton	\$65.00 ton		\$126,750
Crushed Stone Subbase - Roadway	1,200 cy	\$25.00 cy		\$30,000
Parking Deck	240 space	\$18,000.00 space		\$4,320,000
		Subtotal		\$4,476,750
SIGNS & STRIPING				
Crosswalk Striping - Thermoplastic	80 lf	\$7.00 lf		\$560
Signs - Parking, Crosswalk	20 ea	\$120.00 ea		\$2,400
Parking Striping - 4" Thermoplastic	9000 lf	\$0.60 lf		\$5,400
		Subtotal		\$8,360
		Construction Subtotal		\$4,815,860
		20% Contingency (includes mobilization & traffic control)		\$963,172
		10% Engineering/Planning/Design		\$722,379
		10% Municipal Oversight		\$481,586
		5% Construction Inspection		\$481,586
TOTAL				\$7,464,583

NARRATIVE:

Costs include:

- excavation of existing asphalt, curbing, and earth around Miller Auto site and in Legion Lot to prepare site for improvements.
- subbase and asphalt for new 28' wide roadway extension of Currier Street from Gates Street to South Main Street and 22' street connection from Currier Street extension to South Main Street south of the American Legion building.
- new 10' concrete sidewalk with granite curb on both sides of Currier Street Extension and new 5' concrete sidewalk to reconstructed Legion Lot.
- new 240 space parking deck (2 levels) in Legion Lot.
- signs and striping for parking area.
- new interlocking concrete block retaining wall along southern slope in Legion Lot.

Notes:
These costs are conceptual in nature and intended only for planning purposes.
See Potential Infrastructure Improvements plan for specific locations and detail.

Miller Auto/ Legion Lot, Option C				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	
PLANTING				
Street trees in planting areas (3"- 3.5" cal.)	13 ea.	\$750.00 ea.	\$9,750.00	
Street trees in tree grates (3" - 3.5" cal.)	8 ea.	\$750.00 ea.	\$6,000.00	
Structural Soil (15 c.y./tree in paving)	120 c.y.	\$100.00 c.y.	\$12,000.00	
Tree Grates (4' square)	8 ea.	\$1,000.00 ea.	\$8,000.00	
Lawn (seeded)	15894 s.f.	\$0.12 s.f.	\$1,907.28	
PLANTING TOTAL			\$37,657.28	
HARDSCAPE				
Excavation of surfaces & pavement	950 c.y.	15 c.y.	\$14,250.00	
Concrete paving	22458 s.f.	\$6.00 l.f.	\$134,748.00	
Concrete pavers	11844 s.f.	\$14.00 s.f.	\$165,816.00	
HARDSCAPE TOTAL			\$314,814.00	
SITE FURNITURE				
Benches	11 ea.	\$1,200.00 ea.	\$13,200.00	
Bike racks	2 ea.	\$750.00 ea.	\$1,500.00	
Trash receptacles	5 ea.	\$1,000.00 ea.	\$5,000.00	
SITE FURNITURE TOTAL			\$19,700.00	
LIGHTING				
Pedestrian-scale lights	13 ea.	\$3,000.00 ea.	\$39,000.00	
Parking lot lights	12 ea.	\$2,500.00 ea.	\$30,000.00	
LIGHTING TOTAL			\$69,000.00	
WAYFINDING/SIGNAGE				
Kiosk	1 ea.	\$14,000.00 ea.	\$14,000.00	
WAYFINDING / SIGNAGE TOTAL			\$14,000.00	
PUBLIC ART				
PUBLIC ART TOTAL			\$0.00	
Subtotal			\$455,171.28	
20% Contingency (includes mobilization & traffic control)			\$91,034.26	
10% Engineering/Planning/Design			\$45,517.13	
10% Municipal Oversight			\$45,517.13	
5% Construction Inspection			\$22,758.56	
TOTAL				\$659,998.36

NARRATIVE:

Costs include:
See Miller Auto / Legion Lot Site, Schematic Site Plan Option C, for general description of potential improvements

Notes:

1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.
2. Costs not provided for new parking structures, demolition of existing buildings, and earthwork.

Miller Auto / Legion Lot Site - Option D				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	
DEMOLITION/SITE PREPARATION				
Excavation of surfaces & pavements	5,000 cy	\$15.00 cy	\$75,000	
Common excavation	7,500 cy	\$7.50 cy	\$56,250	
Retaining Wall - Interlocking Concrete Block	8,000 sf	\$20.00 sf	\$160,000	
Subtotal			\$291,250	
SIDEWALK				
5' concrete sidewalk w/ granite curb (5' width)	1,500 lf	\$120.00 lf	\$180,000	
5' concrete sidewalk w/ granite curb (10' width)	500 lf	\$160.00 lf	\$80,000	
Subtotal			\$260,000	
ROADWAY/PARKING				
Asphalt - Roadway	2,000 ton	\$65.00 ton	\$130,000	
Crushed Stone Subbase - Roadway	1,400 cy	\$25.00 cy	\$35,000	
Parking Deck	250 space	\$20,000.00 space	\$5,000,000	
Subtotal			\$5,165,000	
SIGNS & STRIPING				
Crosswalk Striping - Thermoplastic	100 lf	\$7.00 lf	\$700	
Signs - Parking, Crosswalk	30 ea	\$120.00 ea	\$3,600	
Parking Striping - 4" Thermoplastic	10000 lf	\$0.60 lf	\$6,000	
Subtotal			\$10,300	
Construction Subtotal			\$5,726,550	
20% Contingency (includes mobilization & traffic control)			\$1,145,310	
10% Engineering/Planning/Design			\$858,983	
10% Municipal Oversight			\$572,655	
5% Construction Inspection			\$572,655	
TOTAL				\$8,876,153

NARRATIVE:

Costs include:

- excavation of existing asphalt, curbing, and earth around Miller Auto site and in Legion Lot to prepare site for improvements.
- subbase and asphalt for new 28' wide roadway extension of Currier Street from Gates Street to South Main Street and 22' street connection from Currier Street extension to South Main Street south of the American Legion building.
- new 5' & 10' concrete sidewalk with granite curb on both sides of Currier Street Extension and to reconstructed Legion Lot.
- new 250 space parking garage (3 levels) in Legion Lot.
- signs and striping for parking area.
- new interlocking concrete block retaining wall along southern and western slope in Legion Lot.

Notes:

These costs are conceptual in nature and intended only for planning purposes.

See Potential Infrastructure Improvements plan for specific locations and detail.

Miller Auto/ Legion Lot, Option D			
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE
PLANTING			
Street trees in planting area (3"- 3.5" cal.)	36 ea.	\$750.00 ea.	\$27,000.00
Street trees in tree grates (3" - 3.5" cal.)	0 ea.	\$750.00 ea.	\$0.00
Structural Soil (15 c.y./tree in paving)	0 c.y.	\$100.00 c.y.	\$0.00
Tree Grates (4' square)	0 ea.	\$1,000.00 ea.	\$0.00
Lawn (seeded)	40257 s.f.	\$0.12 c.f.	\$4,830.82
PLANTING TOTAL			\$31,830.82
HARDSCAPE			
Excavation of surfaces & pavements	950 c.y.	\$15.00 c.y.	\$14,250.00
Concrete paving	44303 s.f.	\$6.00 l.f.	\$265,818.00
Concrete pavers	25233 s.f.	\$14.00 s.f.	\$353,265.22
HARDSCAPE TOTAL			\$619,083.22
SITE FURNITURE			
Benches	15 ea.	\$1,200.00 ea.	\$18,000.00
Bike racks	3 ea.	\$750.00 ea.	\$2,250.00
Trash receptacles	5 ea.	\$1,000.00 ea.	\$5,000.00
SITE FURNITURE TOTAL			\$25,250.00
LIGHTING			
Pedestrian -scale lights	19 ea.	\$3,000.00 ea.	\$57,000.00
Parking lot lights	5 ea.	\$2,500.00 ea.	\$12,500.00
LIGHTING TOTAL			\$69,500.00
WAYFINDING/SIGNAGE			
Kiosk	1 ea.	\$14,000.00 ea.	\$14,000.00
WAYFINDING / SIGNAGE TOTAL			\$14,000.00
PUBLIC ART			
PUBLIC ART TOTAL			\$0.00
Subtotal			\$759,664.04
20% Contingency (includes mobilization & traffic control)			\$151,932.81
10% Engineering/Planning/Design			\$75,966.40
10% Municipal Oversight			\$75,966.40
5% Construction Inspection			\$37,983.20
TOTAL			\$1,101,512.86

NARRATIVE:

Costs include:
See Miller Auto / Legion Lot Site, Schematic Site Plan Option D, for general description of potential improvements

Notes:

1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.
2. Costs not provided for new parking structures, demolition of existing buildings, and earthwork.

Railroad Row Extension and Courthouse Parking

Railroad Row Extension and Courthouse Parking			
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE
DEMOLITION/SITE PREPARATION			
Excavation of surfaces & pavements	2,050 cy	\$15.00 cy	\$30,750
Subtotal			\$30,750
SIDEWALK			
5" concrete sidewalk w/ granite curb	850 lf	\$120.00 lf	\$102,000
Subtotal			\$102,000
ROADWAY/PARKING			
Asphalt - Full depth	2,500 ton	\$65.00 ton	\$162,500
Asphalt - 2" Overlay	250 ton	\$65.00 ton	\$16,250
Crushed Stone Subbase	1,800 cy	\$25.00 cy	\$45,000
Subtotal			\$61,250
SIGNS & STRIPING			
Crosswalk Striping - Thermoplastic	240 lf	\$7.00 lf	\$1,680
Signs - Parking, Crosswalk	20 ea	\$120.00 ea	\$2,400
Parking Striping - 4" Thermoplastic	2000 lf	\$0.60 lf	\$1,200
Subtotal			\$5,280
Construction Subtotal			\$199,280
20% Contingency (includes mobilization & traffic control)			\$39,856
10% Engineering/Planning/Design			\$29,892
10% Municipal Oversight			\$19,928
5% Construction Inspection			\$19,928
TOTAL			\$308,884

NARRATIVE:

Costs include:

- excavation of existing asphalt, curbing, and earth along Railroad Row and in Courthouse parking lot to prepare for improvements.
- subbase, asphalt, and drainage improvements for new one-way circulating lane and head-in parking in Courthouse parking lot.
- new 5' concrete sidewalk with granite curb along southern side of Railroad Row from Joe Reed Drive to parking area, adjacent to train station, and around center island in reconstructed Courthouse parking lot.
- signs and striping for new crosswalks and on-street parking.

Notes:

These costs are conceptual in nature and intended only for planning purposes.

See Potential Infrastructure Improvements plan for specific locations and detail.

Railroad Row and Courthouse Parking				
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE	OPTIONAL PRICE
PLANTING				
Trees in planting areas (3" -3.5" cal.)	12 ea.	\$750.00 ea.	\$9,000.00	\$500 for 2" - 2.5"
Lawn (seeded)	2,200 sf	\$0.12 sf	\$264.00	
PLANTING TOTAL			\$9,000.00	
HARDSCAPE				
2' Wide Paver band in sidewalk - Optional	0 l.f.	\$10.00 l.f.		\$0.00
HARDSCAPE TOTAL			\$0.00	
SITE FURNITURE				
Benches	5 ea.	\$1,200.00 ea.	\$6,000.00	
Bike racks	1 ea.	\$750.00 ea.	\$750.00	
Trash receptacles	2 ea.	\$1,000.00 ea.	\$2,000.00	
SITE FURNITURE TOTAL			\$8,750.00	
LIGHTING				
Relocate Street lights	0 ea.	\$2,000.00 ea.	\$0.00	
Street lights	8 ea.	\$5,000.00 ea.	\$40,000.00	
LIGHTING TOTAL			\$40,000.00	
Subtotal			\$57,750.00	
20% Contingency (includes mobilization & traffic control)			\$11,550.00	
10% Engineering/Planning/Design			\$5,775.00	
10% Municipal Oversight			\$5,775.00	
5% Construction Inspection			\$2,887.50	
TOTAL			\$83,737.50	

NARRATIVE:

Costs include:
 -See Schematic Design + Development Plan for general description of potential improvements
 -Site furniture- locations T.B.D.

Notes:

1. These costs are conceptual in nature and intended only for planning purposes. A more detailed study, including photometrics analysis for lighting design, would be necessary to evaluate total project costs.

New Curbside Parking Meters

New Curbside Parking Meters					
ITEM	SIZE/ QUANTITY	UNIT PRICE (installed)	TOTAL PRICE		
Parking Meters - Installed					
STREET	SIDE	BLOCK			
Railroad Row	North	Gateway Park	11 ea	\$400.00 ea	\$4,400
Gates	North	Old Post Office	2 ea	\$400.00 ea	\$800
Gates	South	Vermont Salvage	4 ea	\$400.00 ea	\$1,600
South Main	West	Barber Shop	5 ea	\$400.00 ea	\$2,000
South Main	West	Hotel Coolidge	23 ea	\$400.00 ea	\$9,200
Gates	South	Vermont	3 ea	\$400.00 ea	\$1,200
South Main	East	Colodny Building	13 ea	\$400.00 ea	\$5,200
Currier Street	West	Verizon	10 ea	\$400.00 ea	\$4,000
North Main	South	Revolutions	5 ea	\$400.00 ea	\$2,000
South Main	East	Old Post Office	12 ea	\$400.00 ea	\$4,800
Briggs Parking Lot			39 ea	\$400.00 ea	\$15,600
Gates	North	Landscape	21 ea	\$400.00 ea	\$8,400
North Main	North	Polka Dot Diner	5 ea	\$400.00 ea	\$2,000
SIGNS & STRIPING					
Signs - Parking			25 ea	\$150.00 ea	\$4,050
TOTAL					\$65,250

NARRATIVE:

Costs include:

- installation of standard, stand-alone parking meters and related signing.

Notes:

These costs are conceptual in nature and intended only for planning purposes.

These costs do not include costs associated with maintenance or enforcement.

See Potential Infrastructure Improvements plan for specific locations and detail.

