Sturbridge Commercial Tourist District Seasonal Trolley Study

Final Report

December 2016


MAIN STREET
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& COLLECTIBLES
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Introduction

This report was prepared on behalf of the Town of Sturbridge and funded through a Downtown Initiative Technical Assistance Grant from the Massachusetts Department of Housing and Community Development (DHCD). Sturbridge town staff provided oversight and review of the draft route alternatives and final report, and administered the travel survey with the support of local businesses and stakeholders. On behalf of DHCD and the Town of Sturbridge, we would like to thank all stakeholders for their participation in the kickoff meeting, support of the travel survey, and their ongoing input into the consideration of a seasonal trolley service.

The 2009 Commercial Tourist District Revitalization Study and the 2011 Sturbridge Master Plan recommended that the Town of Sturbridge explore the feasibility of a tourist trolley service linking the town's many hotels, restaurants, stores, and regional attractions. This report includes a market survey to help determine demand for a seasonal trolley service, as well as a thorough review of potential opportunities and challenges for designing and operating a trolley service in Sturbridge. Two potential shuttle routes were identified, one route providing service every 30 minutes and another providing service every 60 minutes. The study also explored the opportunity for a community trolley charter service, rather than or in addition to a fixed trolley route.

Existing Conditions

The Town of Sturbridge is a growing community of nearly 10,000 residents located at the interchange of Interstate 84 and the Massachusetts Turnpike (Interstate 90). This prime location has afforded the Town an outsized role in New England's tourist economy, with nearly 1,000 hotel rooms and dozens of regionally renowned restaurants. Sturbridge is also home to Old Sturbridge Village, which is among the nation's premier historical attractions with over 250,000 annual visitors. The Town has increasingly become a top choice for regional conferences and major events, including hosting the starting line of the annual Pan-Mass Challenge.

Sturbridge's hotels, restaurants, and attractions are concentrated along a nearly two mile stretch of Main Street (Route 20). This corridor, also known as the Commercial Tourist District (CTD), has been a primary focus of Town planning efforts over the past decade, including the Commercial Tourist District Revitalization Study (2009) and the Commercial Tourist District Improvement Plan (2014). These plans define two distinct corridor segments, each of which has a unique land use mix, street design, and overall character.

The Western Gateway, stretching from Brookfield Road (Route 148) to Cedar Street, has many aspects of a classic New England downtown. The corridor is lined with dozens of restaurants and stores, including several antique shops. The Western Gateway also has a mid-sized hotel, a small theater, and a light industrial complex. Unlike most New England downtowns, however, Main Street itself is a poor environment for people walking and biking. The street carries heavy traffic, including large trucks, often traveling in excess of 35 mph. Much of the corridor lacks sidewalks or has frequent curb cuts, and there no on-street provisions or amenities for people riding bicycles. Stakeholders and town officials have expressed that parking can be a challenge in this area, as most parking is located in private single establishment lots that are viewed as insufficient for the density of restaurants and stores.

The Eastern Gateway, stretching from Cedar Street to New Boston Road, is Sturbridge's primary hotel and attractions district. Six major hotels line the corridor, including the Sturbridge Host Hotel and its associated conference facilities. Old Sturbridge Village is located just south of Main Street off of Stallion Hill Road, while Cedar Pond provides numerous recreational opportunities north of the corridor. Main Street functions as a major regional artery through the Eastern Gateway, with four travel lanes and off-ramps from Interstate 84 and the Massachusetts Turnpike. While most of the corridor has sidewalks, there are few crosswalks, making the area difficult to navigate for people walking and biking. Most Eastern Gateway businesses have large private parking lots, including several hotel lots with 50-150+ spaces each.

In addition to the CTD, several hotels and attractions are located in the Sturbridge Common Historic District (CHD). This area, located to the southeast of the CTD along Main Street (Route 131), is the Town's historic center. The major attraction in the CHD is The Publick House, which has hotel rooms, a restaurant, and several popular function spaces. The Town also hosts numerous events each year on the Sturbridge Town Common, attracting both local residents and regional visitors.

Both the Sturbridge Master Plan (2011) and the Commercial Tourist District Improvement Plan recommended that the Town explore the feasibility of a seasonal tourist trolley service in the CTD and the adjacent CHD (see study area in Figure 1). The trolley was envisioned as a car-free alternative for tourists traveling between Sturbridge's hotels, restaurants, and attractions. One motivating factor for the recommendation was the perceived lack of parking in the Western Gateway and high density of hotels and parking available in the Eastern Gateway. This report analyzed the market for such a trolley service and provides recommendations for potential routes and service designs.

Existing Conditions

Figure 1: Study Area Map

Best Practices in Trolley Service Design

At their heart, tourist trolley services are a public transportation option. Well-designed trolley services therefore follow many of the central tenants of a well-designed bus route or shuttle. Unlike a general public bus route, however, tourist trolley services are typically targeted to a specific travel market and are designed to solve a particular transportation problem. In many communities, tourist trolleys are also competing with a wide range of mobility options, including private vehicles, rental cars, hotel shuttles, taxis, ride-hailing services, and walking or biking.

In order to develop the best possible service for Sturbridge, this study is centered around the following best practices in tourist trolley design. Tourist trolleys are most successful when they:

Solve a Specific Mobility Challenge

Tourists will generally utilize the most familiar and easiest-to-use transportation option, which is most commonly driving their own vehicle or a rental car. Trolley services are therefore most successful in areas where driving a car is difficult or where most visitors do not have their own vehicle. Some common mobility challenges that can be solved by tourist trolleys include:

- Transporting visitors between a remote parking lot and a regional attraction
- Circulating through a tourist district with a high density of restaurants and stores where finding parking is difficult or expensive
- Connecting visitors between their hotel and nearby attractions or shopping and restaurant districts

Have an Easy-to-Understand Service Design

Trolleys often serve commercial and tourist areas where visitors are less likely to be familiar with public transportation. Trolley routes must therefore have an easy-to-understand design that ensures consistent and reliable service. Best practices in service design include:

- Operating Along a Direct Path: The fewer directional changes a trolley route makes, the easier it is to understand. Trolley routes should operate along main streets and avoid unnecessary deviations to destinations or parking lots within an easy walking distance of the primary corridor.
- Symmetrical Service: Trolley routes should operate along the same street in both directions. Riders should be able to walk across the street to access a stop that easily gets them back to where they came from. Trolley routes should not have long one way loops that increase travel times in one direction.
- Clear Service Information: Trolley routes should have well marked stops that include maps and schedules. Trolley operators and staff at major attractions should be trained to provide clear instructions on how to use the service.

Best Practices in Trolley Service Design

Provide Frequent Service at Regular Intervals

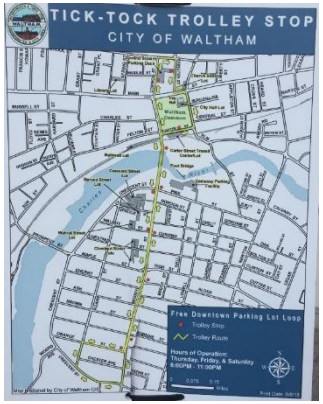
Service frequency is the primary determinant of how tourists can utilize a trolley service. With frequencies of 15 minutes or less, tourists can use the trolley as an on-demand option without relying on a schedule. When trolleys operate less frequently, especially less than every 30 minutes, potential riders have to plan their activities around the schedule. To ensure an easy-to-use service, routes operating at lower frequencies should utilize a clockface schedule where trolleys arrive at each stop at the same times each hour. For example, a trolley operating every 30 minutes could arrive a stop at :24 and :54 minutes after each hour.

Service frequency dramatically effects the market of a given trolley route. Potential markets at different levels of service include:

- 15 minutes or less: Provides a reliable option for all visitors to a tourist district. Potential riders do not have to rely on a schedule to use the trolley, and the service will likely attract visitors making short trips around the district.
- 20-30 minutes: Provides a reliable option for visitors who do not have access to a vehicle or a traveling to a location with difficult to find or expensive parking. Riders will have to plan their trips around the schedule, but will not have to worry if they miss their trip while eating or shopping.
- 60 minutes or more: Provides an alternative mobility option for visitors who do not have access to a vehicle or are traveling to a major attraction for a long visit. Trolleys operating every hour or less will not be an attractive service for most visitors who are shopping, eating at restaurants, or making spontaneous trips.

Case Studies

Tick Tock Trolley (Waltham, MA)



About five years ago, the City of Waltham purchased a trolley vehicle as a community benefit program. Community organizations and government departments are able to rent the trolley free of charge to provide transportation for special events. The trolley cannot be used to provide a regularly scheduled transportation service, such as transporting players from a weekly youth basketball game. The City also does not rent out the trolley for private charters. On Thursday, Friday, and Saturday nights, Waltham uses the trolley to provide a free downtown parking shuttle known as the Tick Tock Trolley. The trolley connects municipal parking lots north of downtown to restaurants located on the City's main street.

Waltham employs a part-time volunteer driver to operate the Tick Tock Trolley, and has an additional roster of volunteer drivers to operate community rental service. The trolley does not generate revenue for the town. Both the initial trolley purchase and the annual operating costs are paid using general funds.

Bath Trolley (Bath, ME)

The City of Bath, Maine owns and operates a trolley bus used to provide a variety of services. In the summers, Bath operates a general public trolley route that loops through their downtown on weekday mornings, Friday evenings, and all day on Saturdays. Riders are charged $1 per ride, and can also purchase a $20 annual pass. The fixed route trolley serves a few thousand riders per summer, but also acts as both a symbol of downtown and a moving billboard for local businesses. Throughout the year, Bath provides charter services for a local museum and a cruise ship operator, as well as one-off rental charters to the general public. The City charges $125 per hour for general public charter services. Charters are particularly popular in the summer, when the trolley is regularly rented for weddings and other events. Around the holidays, Bath uses the trolley for caroling around downtown.

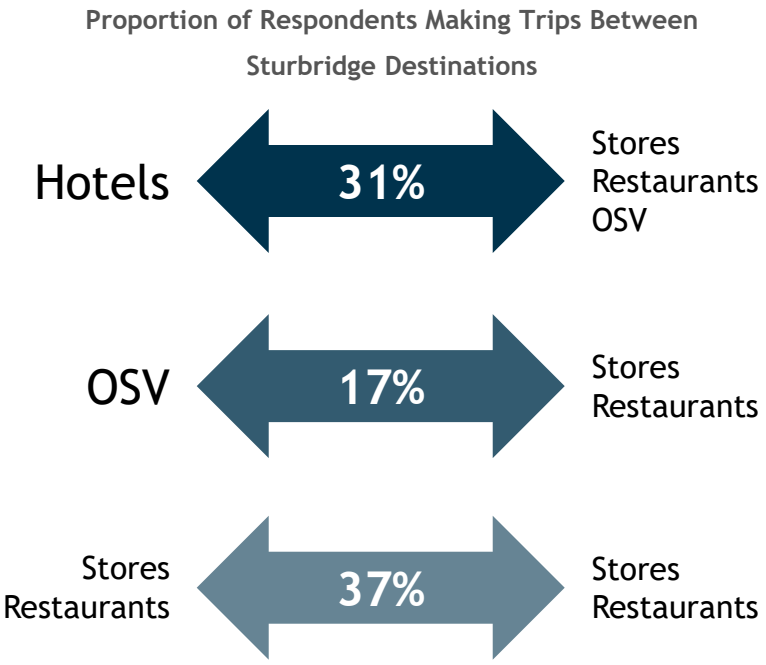
The City of Bath purchased the trolley with a five-year loan repaid with general funds. Trolley operations are funded through charter revenue, advertising revenue, and fare revenue. The City regularly generates a profit through it's trolley operations. Drivers are part time city employees with valid commercial driver's license with passenger endorsement. The trolley vehicle and operations are insurance through the general policy for all city vehicles.

Travel Survey

Through a review of existing conditions and conversations with Town staff and local stakeholders, the project team identified the Commercial Tourist District (CTD) travel markets with the most potential to generate trolley ridership. The largest trolley ridership market would likely be hotel guests traveling to and from local restaurants, stores, and Old Sturbridge Village. Trips between Old Sturbridge Village and local restaurants and stores could be a secondary market. If the service operated at a relatively high frequency, the trolley could also attract visitors or residents traveling between stores along Main Street.

To understand the size of the potential trolley ridership markets, the project team and Town staff developed a travel survey. Town staff distributed the survey to around 40 local businesses, most area hotels, and Old Sturbridge Village. Local business owners asked their customers to fill out the survey during several weeks in August and September of 2016, including the busy Labor Day holiday. Around 300 visitors submitted completed surveys.

Nearly 70% of visitors surveyed reported that they visited multiple destinations in Sturbridge during their trip. About 31% of respondents made a trip between their hotel and either a restaurant, store, or Old Sturbridge Village. Around 17% of visitors traveled between Old Sturbridge Village and a restaurant or store. These travel markets could potentially generate significant ridership for a trolley service. A further 37% of respondents made trips between restaurants and/or stores. These local trips were the largest Sturbridge travel market identified through the survey, and could also be served by a trolley if service is frequent.

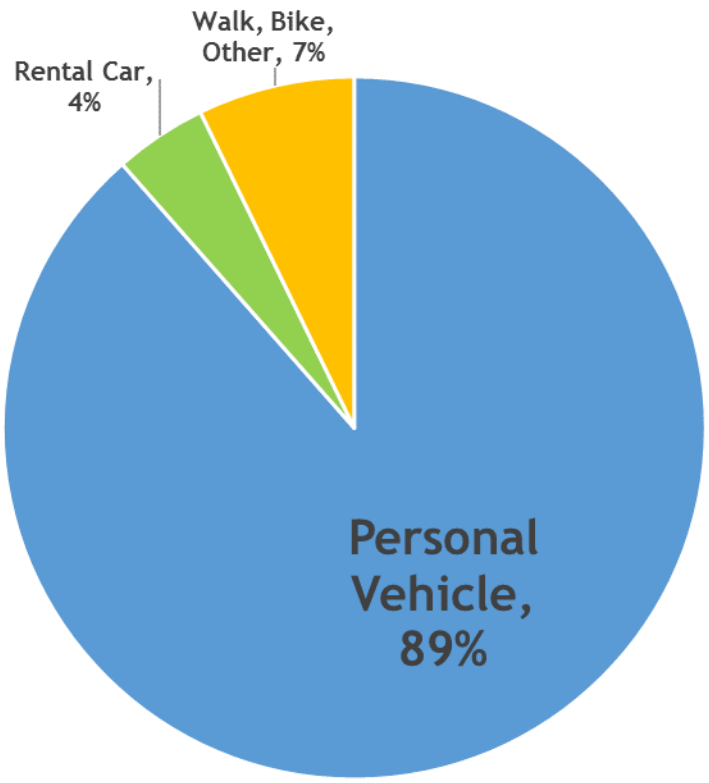


Travel Survey

Survey respondents were also asked what transportation option they used to make their trip around Sturbridge. About 90% of respondents traveled using a personal vehicle that they own. A further 4% used a rental car. This finding is consistent with responses to the survey administered during the Commercial Tourist District Improvement Plan study. Of the respondents who drove during their trip, just over 90% were able to park at their destination's parking lot. Fifteen respondents reported having to park on-street or at a neighboring establishment's parking lot and only one respondent used a valet service.

The findings from the travel survey indicate a mixed demand for a trolley service in Sturbridge. The majority of people visiting Sturbridge make at least one trip between destinations within the CTD. Many of these trips are between hotels and local businesses or Old Sturbridge Village, a travel market that could be effectively served by a trolley service. Most visitors, however, are making these trips using their own personal vehicle, rather than a rental car or taxi. Visitors who drive are also not having trouble finding parking at their destinations. Given the high rate of auto usage and lack of difficulty finding parking, it is likely that many visitors would continue to drive even if a trolley service was available. The greatest demand for trolley service would likely occur during major events, when finding parking may be more difficult. Demand could be quite low during less busy weekends, unless trolley service was operated at high frequency.

Transportation Option Used to Make Sturbridge Trips



Challenges

After completing the travel survey and holding discussions with local stakeholders, the project team analyzed numerous potential trolley alignments. The project team first developed a route that would provide front-door service in both directions to all destinations within the study area. While the developing this initial route, the team identified several challenges that could hinder the implementation of a successful trolley service. Furthermore, the project team discovered that it was not possible to serve all destinations on a trolley route operating every 30 minutes or less. Challenges for implementing a successful trolley route include:

- Many Trip Generators are not Directly Located on Main Street
- Routing Options Require Unprotected Left Turns
- Left Turns are Prohibited at Host Hotel Exit
- No Suitable Layover Locations at Ideal Trolley Terminals
- Potential Routes are too Long to Provide Service Every 30 Minutes

Challenges

Many Trip Generators are not Directly Located on Main Street

Trolley services are most successful when they operate along a main street and directly link multiple destinations. While most hotels, restaurants, stores and attractions in Sturbridge are located near Main Street, many are not located directly on the corridor (Figure 2). Sturbridge Village, for example, is located about a half mile off of Main Street on Stallion Hill Road. Several hotels, including the Host Hotel and the Econo Lodge, also have long driveways off of Main Street. Providing front door service to these locations require deviations from Main Street that increase travel time for other riders. However, not directly serving these destinations would limit the potential trips that could be easily made using the trolley, resulting in lower ridership. Ultimately, any design for a trolley route in Sturbridge would be a balance of directly serving major destinations while maintaining short trip times for most riders.

Figure 2: Destinations Located Off of Main Street

Challenges

Routing Options Require Unprotected Left Turns

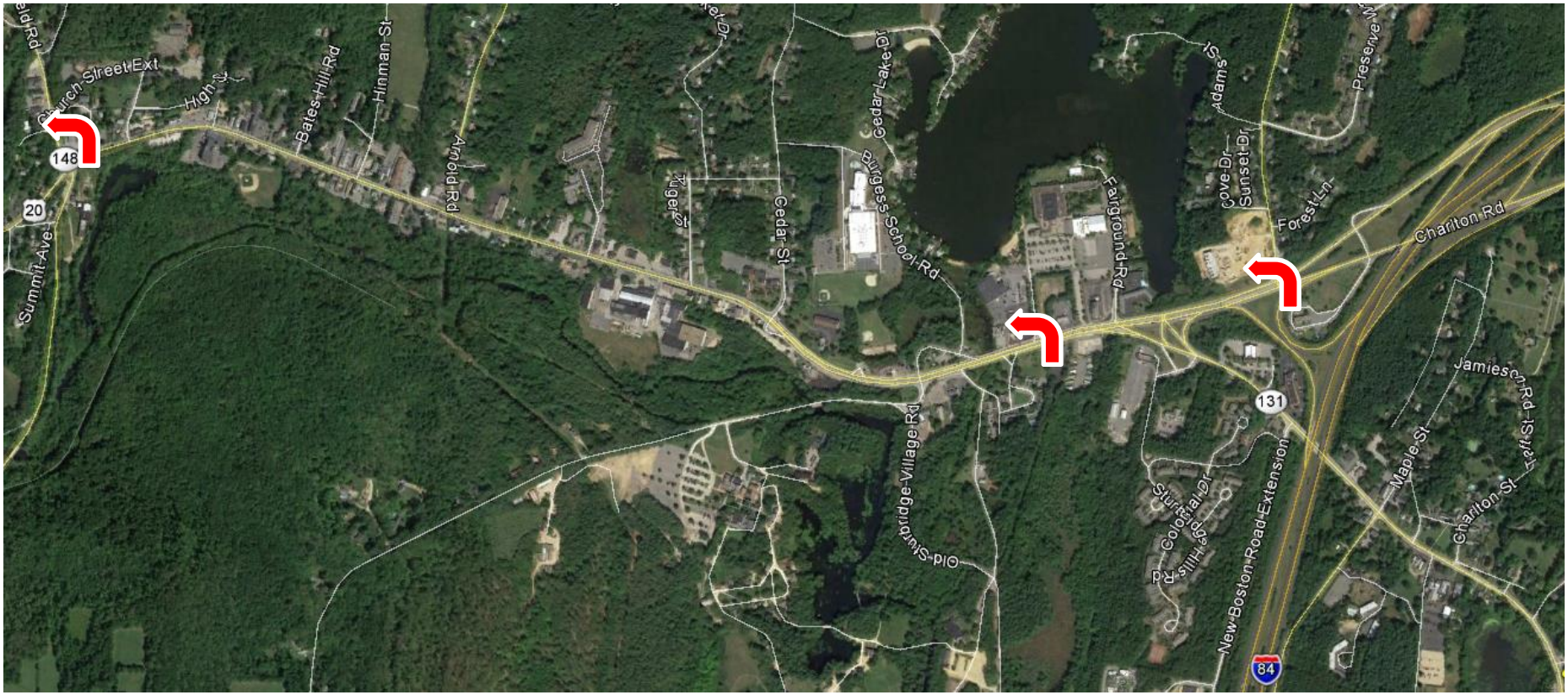
In most operating conditions, transit routes should only make left turns at intersections with traffic signals or at four-way stop signs. Unprotected left turns are difficult and sometimes unsafe to make with a large transit vehicle. Transit vehicles making unprotected left turns also often have wait for a longer clear space in traffic before turning, resulting in unreliable travel times.

When developing the initial trolley route alternatives, the project team identified several destinations that could not be directly served without making unprotected left turns (Figure 3):

- Holiday Inn Express: The main entrance to this hotel will be located at the intersection of Route 20 and New Boston Road. This intersection will remain unsignalized after the hotel is completed, and the nearest signalized turnaround is about 1.5 miles to the west at The Center at Hobbs Brook. Without this major deviation, the Holiday Inn Express could only be served with an unprotected left turn from eastbound Route 20 to New Boston Road.
- Sturbridge Host Hotel: The Host Hotel is currently only accessible from the main entrance driveway off of Main Street. The driveway intersection is unsignalized, requiring an unprotected left turn to enter the hotel when turning from eastbound Main Street. Left turns from the driveway to eastbound Main Street are also currently not permitted. A full discussion of the challenges presented by this intersection can be found on page 16.
- Western Gateway Terminus: The only signalized intersection in the Western Gateway is at Main Street and Brookfield Road, and there are no nearby traffic signals to the west of this location. Therefore, the majority of turnaround locations at the western edge of the study area would require an unprotected left turn. A full discussion of the challenges for turning around vehicles near the intersection of Main Street and Brookfield road can be found on page 17.

Challenges

Figure 3: Intersections with Unprotected Left Turns



Challenges

Left Turns are Prohibited at Host Hotel Exit

The Host Hotel is currently only accessible from the main entrance driveway off of Main Street. This intersection is unsignalized and left turns from the driveway to eastbound Main Street are prohibited. With this configuration, any route directly serving the Host Hotel entrance has to return westbound to the jughandle at Stallion Hill Road in order to continue eastbound on Main Street. The deviation can add three to five minutes on any route that directly serves the Host Hotel and then continues towards the Sturbridge Common Historic District. Any increase in travel time to serve one destination limits the total number of destinations that could potentially be served by a trolley route. This challenge can be addressed using several routing or infrastructure changes, each of which has unique benefits and tradeoffs:

- Use the Jughandle to Return Eastbound: As stated above, retaining the existing travel pattern to return eastbound would add three to five minutes to any route directly serving the Host Hotel (see Figure 4).
- Install a Traffic Signal at Host Hotel Entrance: The Town of Sturbridge could work with MassDOT to install a traffic signal at the Host Hotel entrance. A new traffic signal would allow trolleys to turn left out of the Host Hotel driveway when directly serving the hotel, eliminating the additional travel time required to use the jughandle and increasing reliability.
- Open the Host Hotel Entrance off of Fairground Road: The Host Hotel has an additional entrance off of Fairground Road that is currently gated and closed to general traffic. If the gate was opened, trolley could directly serve the Host Hotel using the signalized Fairground Road entrance. This route would reduce travel time and increase reliability (see Figure 5).

Figure 4: Potential Eastbound Service through Host Hotel via Jughandle

Figure 5: Potential Eastbound Service through Host Hotel via Fairground Road Entrance

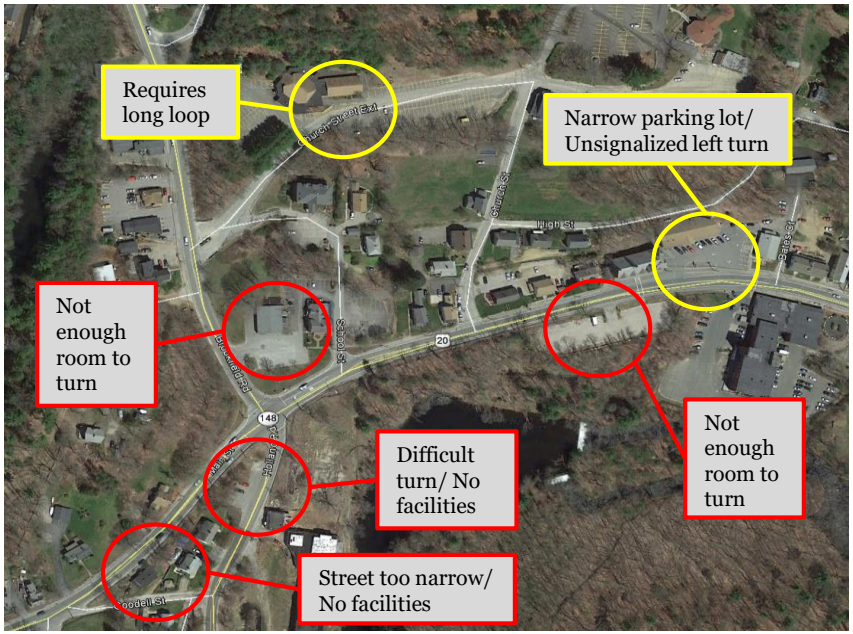
Challenges

No Suitable Layover Locations at Ideal Trolley Terminals

In order to provide reliable trolley service, each scheduled trip should have built in "layover" at end of the route. Layover is a scheduled period of time for the trolley to get back on schedule and to give drivers a short break to rest or use the bathroom. Without layover time, trolleys will not have time to recover from delays and drivers may have to make unscheduled stops to use the facilities.

As layover occurs at the end of a route, there must be a set location for drivers to stop the trolley and wait for the start of the next trip. Layover locations are typically designated on-street parking spaces or a set location in a parking lot, and must be located near a regularly accessible bathroom. Some trolley operators construct bathrooms specifically for drivers at the layover location, while others make an agreement with a nearby business or allow drivers to use bathrooms in a public building.

Figure 6: Potential Western Gateway Terminals



Identifying suitable layover locations was a major challenge while developing potential trolley routes. Six potential layover locations were analyzed at the Western Gateway terminus (Figure 6). Only Micknuck's and St. Anne's Shrine were determined to be viable layover locations, and both had major challenges that could prevent their use. Micknuck's has a small and often busy parking lot that likely does not have enough space for a specifically designated layover location. Using St. Anne's Shrine as a layover location requires a long loop off of Main Street, increasing the total length of a potential trolley route. Both locations are also on private property and would require agreements to provide bathroom access for drivers.

Alternatively, the Town of Sturbridge could modify the publicly owned lot at the intersection of Main Street and Brookfield Road to facilitate trolley service. The current dimensions would not allow a trolley vehicle to stop or turn around when the parking lot is mostly filled with vehicles. With the addition of an entrance onto Main Street, the parking lot could potentially be used as a trolley turnaround or layover location. If there were no suitable restroom facilities at the other end of the trolley line, the Town would need to add a restroom for drivers or enter into an agreement with an adjacent establishment to use their facilities.

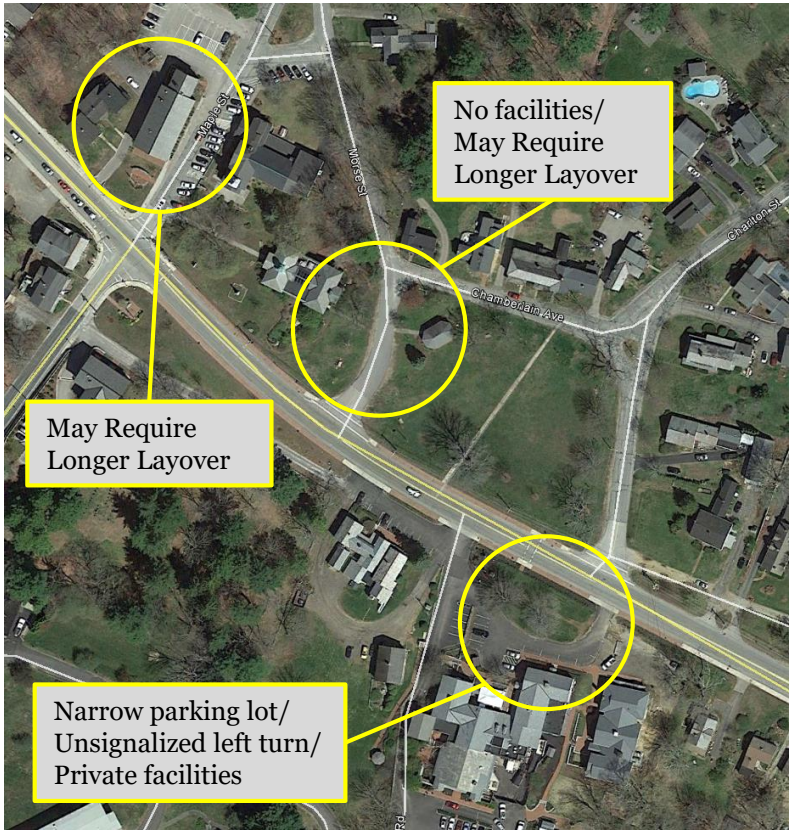
Challenges

No Suitable Layover Locations at Ideal Trolley Terminals

Three potential layover locations were identified in the Sturbridge Common Historic District at the eastern end of the study area (Figure 7). Similar to potential Western Gateway locations, none of these locations provide ideal space for layovers. The Publick House was identified as the preferred layover location, though the Town would have to enter into an agreement for drivers to use their private bathrooms.

Sturbridge Town Hall and Sturbridge Common could be used as alternative layover locations. Eastbound service on routes using these locations would terminate at The Publick House. Operators would then drive out-of-service to the layover location, complete the layover, and then return to The Publick House to begin westbound service. This service design would likely increase the required time for layovers. Town Hall has a public bathroom, while a new facility would need to be provided at Sturbridge Common.

Figure 7: Potential CHD Terminals



Challenges

Potential Routes are too Long to Provide Service Every 30 Minutes

The primary corridor analyzed for this study extends from the intersection of Main Street and Brookfield Road in the Western Gateway to the Sturbridge Town Common in the Sturbridge Common Historic District (Figure 8). A trolley route running exclusively between these terminals without any deviations would be a five mile round trip. At the maximum average speed of a tourist trolley (12 mph), this simple route would take 30 minutes round trip, including layover time. Any deviations would extend the round trip time above 30 minutes, and thus require a 60 minute frequency to provide an easy-to-understand clockface schedule. It is therefore not possible to directly serve all destinations in the study area with a single trolley vehicle operating every 30 minutes. With this finding, there are three potential options for implementing a trolley route in Sturbridge:

- Implement a route operating every 30 minutes that does not serve all destinations in the study area.
- Implement a route operating every 60 minutes that will not reliably serve spontaneous trips and attract fewer riders.
- Use two trolley vehicles to provide service every 30 minutes on a route that serves all study area destinations, attracting more riders while substantially increasing capital and operating costs.

Figure 8: Primary Study Corridor

Trolley Recommendations

After identifying a range of potential trolley alignments, the project team met with Town staff to determine the preferred alignment. While the initial study goal was to identify a single route, the project team and Town staff determined that no single route fully met the vision of local stakeholders. Town staff instructed the study team to develop three options that could serve as the foundation for an ongoing discussion with stakeholders. These options included:

- **Hotel and Restaurant Loop:** A trolley route connecting the majority of Sturbridge's Eastern Gateway hotels with restaurants and stores throughout the Western Gateway. This route could operate every 30 minutes with one trolley vehicle.
- **Sturbridge Attractions Loop:** A trolley route directly serving most destinations in Sturbridge's Commercial Tourist District and Common Historic District, including Old Sturbridge Village. This route could operate every 60 minutes with one trolley vehicle, or every 30 minutes with two vehicles.
- **Community Trolley Charter Service:** The Town of Sturbridge could purchase a trolley vehicle and provide charter services for local events. The trolley could be used exclusively for charters or in concert with fixed-route trolley service.

Trolley Recommendations

Hotel and Restaurant Loop

The Hotel and Restaurant Loop is designed to directly connect the majority of Sturbridge's major hotels in the Eastern Gateway to the dozens of restaurants and stores located in the Western Gateway (Figure 9). The trolley would circle through the loop every 30 minutes, departing from each stop at the same times twice per hour. At this frequency, most visitors would have to plan their trips around the next trolley departure, but would be able to comfortably enjoy their meal knowing that the trolley would frequently return back to their hotel.

Benefits:

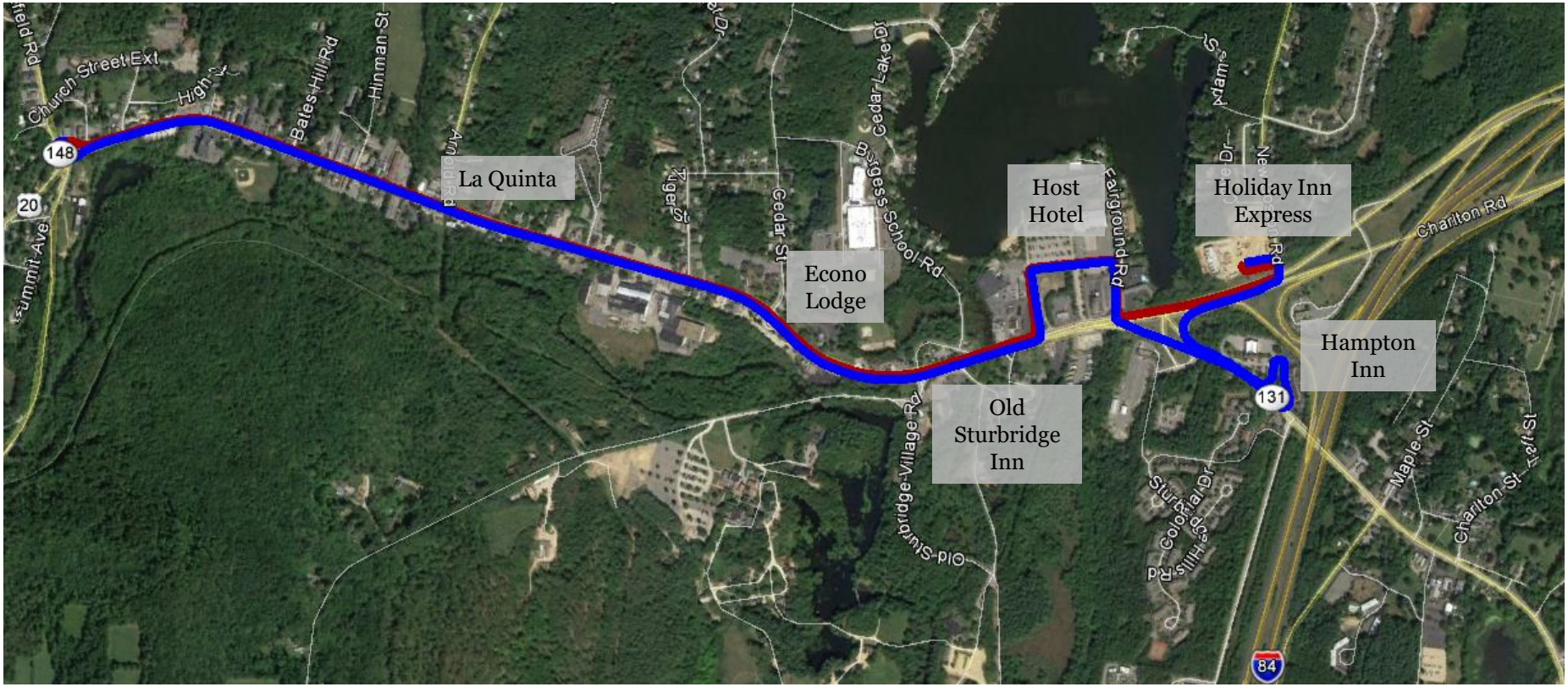
- Provides an alternative mobility option for visitors traveling between Sturbridge's hotels and restaurants, which is the largest potential travel market that could be served by a tourist trolley.
- Could operate every 30 minutes with one trolley vehicle, meeting the needs of many potential riders without the increased capital and operating costs of running two vehicles.

Challenges:

- Route does not serve Old Sturbridge Village or the Sturbridge Common Historic District. Not providing access to these destinations limits the potential travel markets that could be served by the trolley, and increases the likelihood that a visitor would have to rely on a private vehicle or taxi for some or most of their travel around Sturbridge.
- The currently closed Fairground Road entrance must be used to serve the Host Hotel while maintaining service every 30 minutes.
- Serving both the Hampton Inn and the Holiday Inn Express requires a one-way loop at the end of the trolley line. Riders departing from the Holiday Inn would have a shorter trip going westbound than returning eastbound. Riders departing from the Hampton Inn would have a longer trip going westbound and a shorter trip returning eastbound.
- The route design requires that layover occur in the Western Gateway, ideally at the public parking lot at the intersection of Main Street and Brookfield Road. To accommodate the layover, the Town of Sturbridge would have to modify the lot design and provide a bathroom facility for drivers.

Trolley Recommendations

Figure 9: Hotel and Restaurant Loop



Trolley Recommendations

60-Minute Frequency Service Alternative: Sturbridge Attractions Loop

The Sturbridge Attractions Loop is designed to directly serve nearly all attractions, restaurants, stores and hotels in both the Commercial Tourist District and the Common Historic District, including Old Sturbridge Village (Figure 10). The trolley would circle through the loop every 60 minutes, departing from each stop at the same time each hour. At this frequency, riders would have to plan their trips around the trolley departure time, but would be able to make a wide range of trips without a personal vehicle. Most riders would likely use the trolley to travel between their hotel and Sturbridge Village, as the low frequency service would be difficult to use for more spontaneous trips to restaurants or stores.

Benefits:

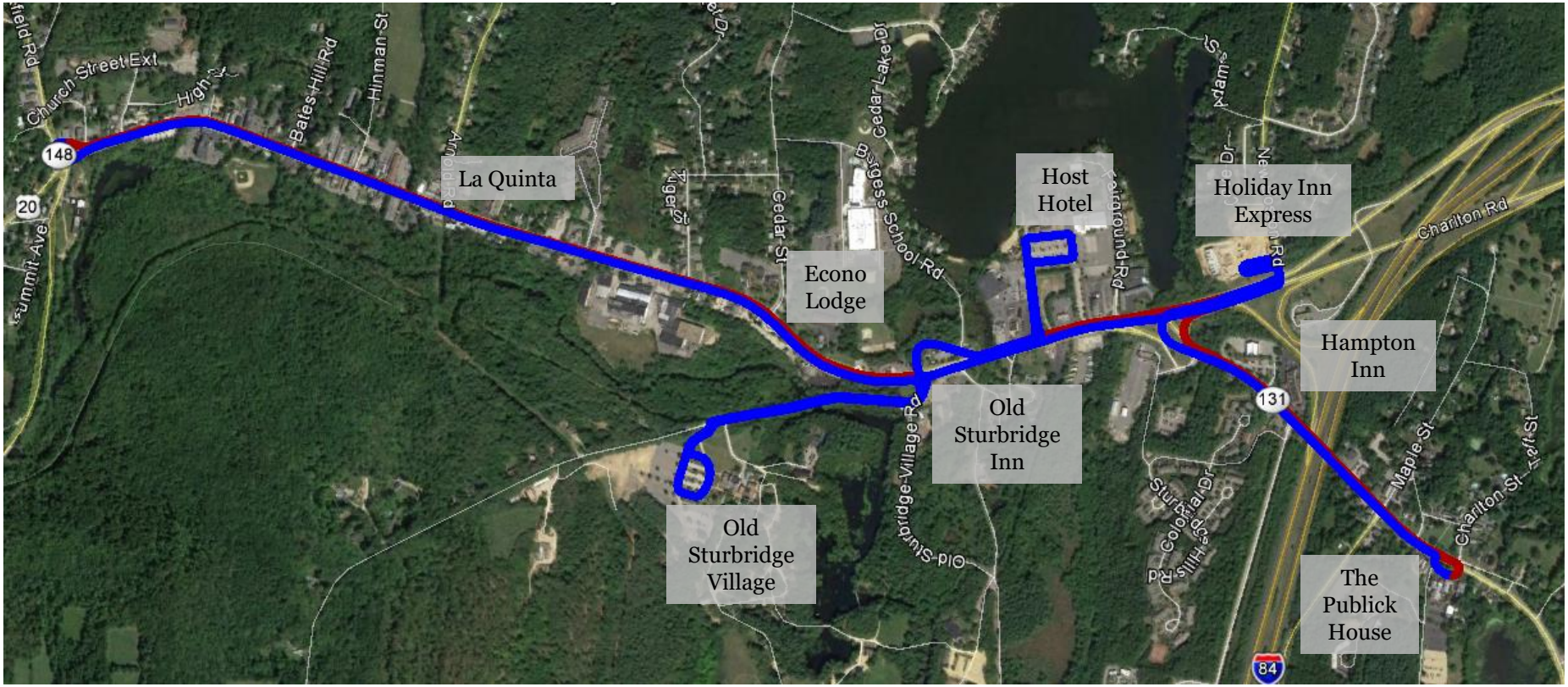
- Provides direct access to nearly all Sturbridge attractions, restaurants, stores and hotels, including Old Sturbridge Village.
- Route uses existing Host Hotel entrance and does not require any new traffic signals.
- Layover could be provided either at The Publick House or at the public parking lot at Main Street and Brookfield Road.

Challenges:

- Each stop would only be served once per hour, requiring all trips to be planned around the trolley schedule. This limited frequency would decrease the trolley's attractiveness for many Sturbridge visitors.
- Serving Old Sturbridge Village, the Host Hotel, and Holiday Inn Express require long deviations off of Main Street. These deviations significantly increase travel time for people riding between the Western Gateway and the Common Historic District.

Trolley Recommendations

Figure 10: Sturbridge Attractions Loop



Trolley Recommendations

Community Trolley Charter Service

The Town of Sturbridge could purchase a trolley to primarily use for charter rentals. Charter service could be provided for a fee to the general public for use as part of weddings or other functions. The Town could also enter into contracts with local hotels and other businesses to offer charter services as part of events packages. Alternatively, the Town could limit rentals to community organizations and government entities to provide an ongoing community transportation benefit.

During peak travel periods, the Town could choose to use the trolley to provide one of the previously described fixed-route services. Specialized trolley services could also be operated for special events, such as those regularly held on the town common or in neighboring communities.

Capital and Operating Costs

Initial Capital Costs

The primary capital expenditure for implementing a trolley service is purchasing the trolley vehicle. Trolley vehicles come in numerous varieties, varying by length, seating capacity, ADA accommodations, fuel, and average life span. An new high-floor diesel-powered trolley vehicle seating 18 to 40 passengers typically costs between $150,000 to $500,000 depending on vehicle size. A larger low-floor trolley vehicle seating up to 40 passengers can cost anywhere from $400,000 to $800,000. Sturbridge could also opt to use a lower cost cutaway bus, which typically sell for between $50,000 to $200,000.

Cutaway Bus

Purchase Price: $50,000-$200,000

Seats: 20 to 33 passengers

Useful Life: 5-7 years

High-Floor Trolley Bus

Purchase Price: $150,000 to $500,000

Seats: 18-40

Useful Life: 12+ Years

Low-Floor Trolley Bus

Purchase Price: $400,000-$800,000

Seats: 28 to 40

Useful Life: 12+ Years

Ongoing Operating Costs

Ongoing operating costs for trolley service include driver wages, fuel, maintenance, and insurance. In total, these costs typically range from $40 to $100 per hour. Some communities offset these some or most of these costs through charter rentals, advertising, or fares.

The project team analyzed the potential costs for different implementations of seasonal trolley service. Operating costs were assumed to be $75 per hour using a single vehicle to provide service at either 30 minute or 60 minute frequency.

- **Daily Dinnertime Trolley** (Daily/4 hours per day/July-September): $24,600 per year
- **Long Weekend Afternoon and Dinner Trolley** (Thursday-Sunday/8 hours per day/July-September): $31,800 per year
- **Weekend All Day Trolley** (Saturday and Sunday/12 hours per day/July-September): $24,300 per year