



LEBANON PEDESTRIAN & BICYCLIST ADVISORY COMMITTEE

MARCH 7, 2023 - 7:00 PM

COUNCIL CHAMBERS, CITY HALL OR
REMOTE VIA VIRTUAL PLATFORM
LEBANONNH.GOV/LIVE

-
1. **Call to Order**
 2. **Approval of Minutes**
 - A. February 7, 2023
 3. **Open to the Public**
 4. **Study Items**
 - A. Updates from Other Boards
 - Planning Office - Planning Staff
 - Safe Routes to School - Planning Staff
 - City Council
 - Planning Board/CIP Meeting
 - Police Reports
 - Mascoma River Greenway Coalition
 - Class VI Roads
 - State of NH Updates
 - Rails to Trails
 - Communications Plan
 - B. Update on the multimodal and complete streets implementation plan
 - C. Review of Draft Miracle Mile Corridor Study
 5. **Other Business**
 - A. Drivers education and ped-bike safety, guest speaker Sharon Cameron
 - B. Updates on City and NHDOT Projects
 - C. Curb the Car Day & Bike Rodeo 2023
 - D. High contrast crosswalks - Next Steps
 6. **Future Agenda Items**
 - A. Bike Friendly Community Designation Renewal
 - B. Vision Zero Policies and NYC Safety Measures ranking
 - C. E-transportation: E-bike library and charging station locations, e-trishaw, EVs
 - D. Bike Racks/Repair Stations
 - E. 12A path legal review/status

F. Route 10 ped-bike corridor

7. Adjournment

The order of agenda items is subject to change.

Meetings are open for in-person and remote attendance. Members of the public that wish to attend remotely may do so by going to LebanonNH.gov/Live where you will find instructions on how to enter the meeting. Members of the public will be able to participate and ask questions through the City's virtual platform or by phone. Please note: Should technical difficulties occur during the meeting that disrupts virtual or phone connection(s), the meeting will continue without remote access capabilities.

DRAFT

PEDESTRIAN & BICYCLIST ADVISORY COMMITTEE
REGULAR MEETING MINUTES
COMMUNITY ROOM – KILTON LIBRARY &
REMOTE VIA WEBEX LebanonNH.gov/LIVE
7:00 PM, TUESDAY FEBRUARY 7, 2023

MEMBERS PRESENT: Colin Smith (Chair); Adams Carroll; Sean Dittrich; Marie McCormick;
Jake Kelleher; Erling Heistad (City Council); Clifton Below (Alt)
(remote); Amy Chan; Haynes Bunn

MEMBERS ABSENT: George Sykes (City Council, Alt); Dave Koch (Alt)

STAFF PRESENT: Rebecca Owens (Associate Planner); Nate Reichert, Planning Director

1) CALL TO ORDER:

Chair Smith called the meeting to order at 7:03 PM.

2) APPROVAL OF MINUTES

A. January 3, 2023

A Motion was made by Mr. Heistad to accept the meeting minutes of January 3, 2023, as presented.

Seconded by Ms. Bunn.

**The vote on the MOTION was approved (8-0-0).*

3) OPEN TO THE PUBLIC: None at this time.

4) STUDY ITEMS - *This item was postponed to later in the meeting but there was not time to take it up*

A. Updates from Other Boards

- Planning Office - Planning Staff / Planning Board / CIP Meeting
- Safe Routes to School - Planning Staff
- City Council - Erling Heistad
- Planning Board/CIP Meeting - Gregorio Amaro
- Police Reports
- Mascoma River Greenway Coalition - Colin Smith
- Class VI Roads - Colin Smith
- State of NH Updates – Vacant
- Rails to Trails - Amy Chan
- Communications Plan - Marie McCormick

B. Update on multimodal and complete streets implementation plan

1
2 **5) OTHER BUSINESS**

3 A. Annual Coordination with the Department of Public Works

4 Nik Coates, Deputy City Manager for Public Works, and Brian Vincent, City Engineer, joined the group.

5
6 Mr. Coates reviewed a number of proposed DPW projects for the upcoming year including lane striping,
7 paving work, asset management work, and sidewalk plowing. He explained that line striping will likely
8 occur in July of this year. While the City will contract for striping of the larger roads, this year it will try
9 to do the short lines in-house. This includes side streets, crosswalks, and parking lots. The DPW will also
10 be attempting a pilot project for colorful crosswalks this year. The pilot will be considered in three or four
11 locations around the City. The DPW continues to discuss how to best implement these strategies and
12 would like to hear from the Committee on any suggestions. He reviewed the streets proposed to be paved
13 this year. The Public Safety Committee now meets on a monthly basis and continues to increase the levels
14 of communication and collaboration amongst the departments. At the next Public Safety Committee
15 meeting, the group will review locations for traffic speed and volume counts. He noted that additional
16 locations can be suggested to the group. There is also an ongoing effort across the City within the
17 departments to document all fixed assets, including roads and water/sewer facilities. There is an effort to
18 document drainage issues to begin to consider replacing and repairing this infrastructure. Mr. Coates
19 stated that a schedule has not yet been created for sidewalk and street sweeping.

20
21 Mr. Vincent reviewed some of the City's CIP projects. The 12-A bridge project in West Lebanon is
22 expected for 2024. This will include a sidewalk element near the bridge. The Lahaye Drive/Mt Support
23 Road roundabout project, which includes a multiuse path extension and crossing elements within the
24 roundabout, is also slated for 2024. The Lahaye Drive intersection project is slated for 2024. The
25 Mechanic Street/High Street/Mascoma Street project is projected for 2025. On Mechanic Street, there is a
26 short section of sidewalk proposed, which will likely be considered after 2025. The Miracle Mile water
27 project is slated for 2023 and includes phase three of a master plan for sidewalks. The downtown West
28 Lebanon Main Street project is slated for 2024. He noted that Ms. Owens is working on Sachem/DH Trail
29 project, which is in the early stages. The City Manager has asked for this to include a walkway, including
30 pavement etc. He will present the results for the Miracle Mile Corridor Study in March.

31
32 Ms. Owens noted that she would send along the Ped/Bike Committee's recommendations for the high
33 contract sidewalk locations.

34
35 Mr. Below noted that the Federal Highway Administration recommends against retroreflective properties
36 for this paint. Mr. Coates stated that the DPW continues to work through the research and process for this
37 project.

38
39 Ms. Owens explained that the Committee is requesting that no debris be left in the shoulders after
40 sidewalk sweeping. The Committee also requested the DPW to schedule both sidewalk and road
41 sweeping close together. Mr. Coates noted that SeeClickFix can be used for any work orders that need to
42 be taken care of around the City.

43
44 Alan Schnur noted that the bike lane on Bank Street is marked off, but half of this is taken up by sewer
45 grates. He asked if these could potentially be replaced to be more bike friendly. Mr. Coates stated that this
46 would require significant replacement work, but the DPW is trying to compile data in order to schedule
47 paving projects that can be done most appropriately for the road.

48
49 B. Ped/Bike Annual Crash Data Analysis 2006-2022 – *The Board tabled this to later in the meeting*

50
51 C. West Lebanon Action Plan Implementation

52
53 Chet Clem, Lyme Properties; Kevin Purcell, and Todd Chewning presented to the Committee regarding
54 the West Lebanon Greenway. Mr. Clem stated that the West Lebanon Revitalization Advisory Committee

1 reviewed relevant studies for this project. The website contains ArcGIS maps for the Greenway. The
2 Committee has also worked with Paul Coates regarding Westboro Yards and envisioning potential uses.
3 The Action Plan was the result of this research and communications and was submitted to the City
4 Council in January 2022. He noted that a six-acre waterfront parcel was transferred to a not-for-profit
5 entity called Friends of River Park, to manage access, programming, etc. The group applied for National
6 Park Service Rivers, Trails, and Conservation Assistance, which looks to help nonprofit organization
7 disparities and advancing efforts. This is not a funding source but contains connections. The group has
8 considered working with Paul Coates to create a cohesive plan for the area to create uniformity and
9 familiarity throughout the process. The assistance through the National Park Service is due to expire in
10 April. In applying again, the Friends of River Park can be the applicant, and the City has suggested
11 working with a captain for this process.

12
13 Mr. Clem explained that the challenge is that the Greenway is actually 15 different pieces of land, each
14 with their own control and status. It is important to present the overall vision and also give people an
15 understanding of all the challenges. From River Park to the Wilder Dam, there are three property owners,
16 and trail easements have been discussed with these owners. There has been an ongoing conversation with
17 the water dam owner who regarding making a connection down to River Park, improving access and
18 connection to the existing network within the Boston Lot. The top two actionable, visible improvements
19 in the Plan include ways to generate enthusiasm in the project, and connecting the community to the
20 rivers, Greenway, and parks. He would like to consider how to work best with the Ped Bike Committee to
21 coordinate efforts.

22
23 Mr. Clem noted that a contiguous trail was found behind the 12-A retail stores, with some deeded public
24 access easements. The exception along this route is the JCPenney parcel, as it predates that requirement
25 from the City. None of these easements have been enforced and the trail is overgrown at this time. The
26 Rails to Trails Alliance is prepared to hold those easements, and the owner/developer of the JCPenney
27 parcel is ready and willing to participate. Efforts continue with the City's Planning Department to
28 determine the access status of each parcel along this route.

29
30 Mr. Carroll noted that the City has been negotiating with DOT to secure the abandoned section of rail
31 down to the Stone Bridge from the current terminus of the Greenway. He asked if there is a feasible
32 opportunity to connect this area to Westboro Yards. Ms. Owens stated that no one is hedging any bets on
33 this item going through Iron Horse Park. Mr. Clem explained that a State Senator advanced legislation to
34 amend the Recreational Use Statute in New Hampshire to specifically make railroads immune from
35 liability. There is a potential to create a rail with trail section along the Iron Horse property.

36
37 Mr. Dittrich stated that he was surprised to hear there is a possible connection from the Greenway all the
38 way to the L.L.Bean area, thus opening up the retail area to be accessible by bike and foot.

39
40 Chair Smith stated that the City's Ped Bike Plan discusses aspects of this project. This is the planning
41 document that the Committee will use to push these items forward into funding opportunities, such as the
42 CIP process. Other items will be considered through the Recreation Department. Ms. Owens stated that
43 the Walk Bike Ride Lebanon Plan prioritizes projects based on readiness and identifies what is needed to
44 make other projects ready. Once projects are ready, it is easier to place them into a funding process.
45 Concepts, cost estimates, and public support are needed to help push projects forward. The Greenway
46 extension project, from the current terminus to 12-A, included letters of support from the public and other
47 City groups. These letters were included as part of the CMAQ funding application.

48
49 Ms. Chan stated that Friends of the Northern Rail Trail has a longstanding relationship with DOT and is
50 making progress toward a shared rails with trail project at the southern end of Concord. This is a similar
51 connection point to what is being proposed in West Lebanon. The hope is that this relationship will be
52 fruitful for the West Lebanon project. She noted that measurable impacts are helpful in pushing similar
53 projects forward.

1 The Committee discussed a future agenda item regarding Driving School.

2
3 B. Ped/Bike Annual Crash Data Analysis 2006-2022 – *The Board took up this item at this time*

4
5 Ms. Bunn stated that she found that a large portion of pedestrian crashes occurred in parking lots. Around
6 2014-2015 it appears something changed, potentially regarding the data collection process. The analysis
7 separated 2006-2015 data due to potential data collection changes, and due to the fact that the data is a bit
8 older. There were ten crashes reported in 2022. Ten crashes was a relatively small number, compared to
9 what was seen in the total of the past 17 years. From the period of 2016 through 2022, there were 51
10 crashes. There were 52 people involved in these crashes, with one crash involving multiple pedestrians.
11 Since 2016, in aggregate there has been a crash in each month for pedestrians. For bicyclists, crashes have
12 been concentrated in June through November. This is likely due to weather related reasons. The majority
13 of crashes for cyclists occurred on Fridays and Sundays. All bicyclist crashes happened in daylight. It
14 would be interesting to understand the volumes of pedestrians that are out in daylight versus dusk to
15 determine if certain times are more dangerous. The most common time of day for pedestrian crashes to
16 occur was between 9:00 AM and 6:00 PM. All bicyclist crashes in this time period were male. Parking
17 lots really stood out as the location for a majority of the pedestrian crashes. The average age of all
18 pedestrians involved in crashes in parking lots, aside from two of the years, was older than the average
19 age of all pedestrians. In 2018, there was one crash involving two pedestrians. The data collection for
20 crashes seems to be getting more standardized, which is helpful for the analysis. The reports used to
21 include data about the motor vehicle and the motor vehicle operator involved in the crash, but this data is
22 no longer included in the reports. November had the highest number of pedestrian crashes overall.

23
24 Mr. Carroll suggested normalizing the observed crash incidents to volumes, in order to collect data on
25 pedestrian and bicyclist volumes.

26
27 Nate Reichert, Planning Director, stated that he is working on a federal grant for Safe Streets for All.
28 Grants, such as this, partially make determinations for funding based on the type of data the Committee is
29 collecting. Data based on accidents and fatalities occurring in the region is one of the major eligibility
30 criteria. This illustrates that projects with included data set informs the application. This sort of data
31 queues up these applications and gets them ready for funding. He thanked the volunteers on this
32 Committee for working to make change happen.

33
34 D. E-transportation: E-bike library and charging station locations, e-trishaw, EVs – *this item was not*
35 *addressed directly at this time*

36
37 E. High contrast crosswalks - Next Steps - *this item was not addressed directly at this time*

38
39 F. Updates on City and NHDOT Projects - *this item was not addressed directly at this time*

40
41 G. Curb the Car Day & Bike Rodeo 2023 - *this item was not addressed directly at this time*

42
43 **6) FUTURE AGENDA ITEMS & FOLLOW-UP NEEDS:** *this item was not addressed directly at this*
44 *time*

45
46 A. Bike Friendly Community Designation Renewal

47
48 B. Vision Zero Policies and NYC Safety Measures ranking

49
50 C. Bike Racks/Repair Stations

51
52 **7) ADJOURNMENT:**

53
54 *A Motion was made by Mr. Heistad to adjourn the meeting.*

1 ***Seconded by Mr. Dittrich.***
2 ****The vote on the MOTION was approved (8-0-0).***
3
4 **The meeting was adjourned at 9:02 PM.**
5
6 Respectfully submitted,
7 Kristan Patenaude, Recording Secretary

MEMORANDUM

TO: Brian Vincent, PE – City Engineer – Lebanon, NH

FROM: Jeffrey Santacruce, PE, PTOE – Sr. Team Leader

DATE: January 12, 2023

SUBJECT: Miracle Mile Corridor Study – Lebanon, NH

Miracle Mile Design Narrative/Technical Memo Draft. Note the stationing is a reference alignment and is not intended to be used for construction or as a permanent roadway alignment.

Existing Conditions

The existing Miracle Mile (US Route 4/NH Route 10) Corridor is an East-West Roadway starting just West of the Mascoma River and ending at Poverty Lane. The existing roadway width varies from 40 to 45 feet. In general, the roadway consists of two 11-12 foot-wide travel lanes, one in each direction, and a dual use center turn lane that varies in width from 10 to 11 feet. The roadway lane usage is shown in Figure 1.



Figure 1 - Roadway Lane Usage

The land use along the corridor consists of mostly commercial properties, including a large shopping Plaza with a movie theatre, a grocery store and several smaller shops and restaurants. In addition, a new Dunkin Donuts restaurant was recently built in the parking lot of the plaza. There is an existing sidewalk on the north side of the roadway between the Ford Dealership and the eastern plaza entrance. There is an existing transit route along this corridor that includes a bus stop located in the approximate center of the corridor near the existing thrift store and new Dunkin Donuts. There is a crosswalk with a median refuge island in the vicinity of the bus stops, connecting the thrift store and the main shopping plaza. The shoulder on the eastbound side of the roadway at the crosswalk necks down to less than 3 feet wide, making it difficult for a bicyclist to stay in the shoulder. Figure 2 below shows the crosswalk with median refuge island between Miracle Mile Plaza and Listen Thrift Store.



Figure 2 - Crosswalk with Median Refuge Island

Many of the driveways along this corridor are wide without any sort of pavement markings. Many appear to have been designed to accommodate separate left and right turn lanes for exiting traffic, however they lack the proper signage or pavement markings to operate this way. An example of this can be seen in Figure 3 on the following page, which shows a vehicle in the center of the Miracle Mile Plaza Western Driveway.



Figure 3 - Western Drive to Miracle Mile Plaza

During the site review several cars were seen entering and exiting these driveways by crossing over what would be considered the centerline of the driveway. It appears this crossing maneuver occurred to beat out traffic along mainline so the vehicle did not need to wait for another acceptable gap in traffic. This can lead to an increased potential for crashes and can make it more difficult for pedestrians and bicyclists to navigate across these driveways.

The Plaza parking lots appear to lack clear delineation of access lanes and/or circulation patterns that are confusing. During the site visit several vehicles were observed in the Plaza parking lot cutting across existing striped parking spaces to get from one side to another and some were even observed parked within a poorly marked aisle near the cinema. The new Dunkin Donuts has increased traffic generation in the Plaza especially at the exit from the drive through where it meets the eastern Plaza driveway. Several vehicles exiting Dunkin Donuts were seen blocking the right only lane as they attempted to get into the left turn lane to exit the site. Figure 4 on the following page shows the short distance from the roadway to the Dunkin Donuts drive-thru at the Miracle Mile Plaza Eastern Driveway.



Figure 4 - Dunkin Donuts Drive Thru Exit

At the western limits of the project, on the north side of Miracle Mile is the existing Mascoma River Greenway Trailhead. There is not a clear connection from the roadway to this trailhead. Any cyclist or pedestrian would need to enter the trailhead through the Ford Dealership overflow driveway. The area has a steep slope and no markings indicating that there is a trailhead. See Figure 5.



Figure 5 - Mascoma River Greenway Trailhead

Traffic Volumes

Traffic volumes along Miracle Mile were not collected as part of this project. However, the recently constructed Dunkin Donuts performed a traffic study in order to determine the volume of additional vehicles that would be entering and exiting Miracle Mile Plaza. The mainline traffic volumes along Miracle Mile were also included in the study. The weekday AM Peak Hour 2021 Build Volumes were 491 vehicles per hour westbound and 374 vehicles per hour eastbound. When these volumes are grown over 10 years to 2031, they increase to 848 vehicles per hour westbound and 498 vehicles per hour eastbound. These are acceptable volumes for one lane in each direction, as 1,900 vehicles per hour is the typical limit for a single lane of traffic.

Crash Data Analysis

Crash data from January 1, 2015, through August 12, 2022, was provided by the Lebanon Police Department. The crash data included crashes along the Miracle Mile as well as in adjacent parking lots. The data is broken up into two basic locations – Roadway and Parking Lot. However, no specific locations for the crashes along the roadway or in parking lots were provided. In addition the data did not provide information on the types of crash (i.e. sideswipe, rear end, etc). In total there were 175 crashes observed during this 6 ½ year period. Below we separate them into two subsets.

Parking Lots

120 of the 175 reported crashes occurred in a parking lot. The parking lot crash data was further separated into four sub-categories based on the severity of the crash including: With Personal Injury (2 crashes), No Personal Injury (45 crashes), Past (12 crashes), and Hit & Run (61 crashes). The crash data does not state whether the categorized crashes are mutually exclusive or if one crash may include more than one occupant.

Observations of the traffic circulation within the existing Plaza parking lot reveal that vehicles generally do not conform to the existing pavement markings, but rather drive through the lot in whatever direction best suits their needs and destination.

Roadway

The remaining 55 reported crashes occurred along the roadway. The Roadway crash data was further separated into three subcategories based on the severity of the crash including: With Personal Injury (15 crashes), No Personal Injury (35 crashes), and Hit & Run (5 crashes). The crash data does not state whether the categorized crashes are mutually exclusive or if one crash may include more than one occupant.

Proposed Improvements

Roadway

The city desires this section of roadway to be more multimodal friendly as seen by the construction of the new sidewalk and bicycle lanes. In reviewing the corridor it was clear that the roadway and bike lanes lacked a consistent width, even to the point that the bike lane was only 3 feet wide. Therefore, it is recommended that the roadway be re-stripped to provide for a consistent 5 foot-wide bike lane on both sides of the road, with 11 foot wide travel lanes and a 10 foot wide center turn lane. The proposed 5 foot wide bike lane with updated bicycle lane markings on each side of the road will provide increased safety for bicyclists. In order to provide the lane configuration noted it is recommended that the curb line along the sidewalk on the north side of the road be held, and any adjustment be made to the south side of the roadway in areas where the bike lane is not 5 feet wide. We have also shown the additional sidewalk that is scheduled to be constructed on the north side of the road within the next 12 months between the east Plaza driveway and Poverty Lane.

The existing crosswalk and refuge island should be re-constructed so that the refuge is in the center of the roadway and shaped so that it is easier to plow. It is recommended that the existing curbing and rectangular rapid flashing beacons (RRFBs) in the island are re-used for the proposed island.

Driveways

In general, it is recommended that several of the existing driveway curb cuts along Miracle Mile be narrowed to provide better access management and improved safety. While many of the driveways were designed to allow a separate left and right turn lane for improved traffic operations, the side by side lane usage on an unsignalized driveway can present sight line restrictions for one vehicle trying to see around another vehicle which can reduce safety. In addition, these wider driveways also increase the crossing width for pedestrian and bicycles and the side by side vehicles are also apt to pull forward into the crossing area of pedestrians and bicyclist in order to see around the adjacent vehicle without being able to see if there is a pedestrian or a pedestrian crossing.

Lebanon Ford Dealership

The Lebanon Ford Dealership utilizes parcels on both sides of the road at the western limits of the study area. The southern side of the road hosts the “main” part of the dealership, where most of the cars and the showroom/services building is located. This area is currently under construction, with the building being renovated and expanded and the parking lot being reconstructed as shown in Figure 6. The dealership utilizes the lot on the northern side of Miracle Mile as a staff parking area and vehicle overflow storage area. Staff and customers frequently cross Miracle Mile to travel between the main building and this northern lot. Given the frequency of pedestrian crossings and traffic conditions it is recommended that a crosswalk be installed with pedestrian signage and a raised median refuge island is installed in the center turn lane. It is also recommended that RRFBs be installed on each side of the road and in the median island similar to the island and signs installed at the existing crosswalk near the bus stop as shown in Figure 2 on page 2.



Figure 6 - Ford Dealership Under Construction

Since we are getting into winter and the Ford Dealership would like to open for business it is recommended that crosswalk pavement markings be added across the roadway and flexible delineators installed in place of vertical granite curb for the refuge island. This will delineate the same areas as the future proposed raised concrete island that would be installed. The location of the proposed crosswalk refuge island may limit left turns out of the Ford Dealership main building by large tractor trailer trucks. This should be discussed with the Ford Dealership to make sure it does not represent an operational issue. Given the location of Interstate 89 to the south of the site, it is anticipated that car carrier type tractor trailer trucks exiting the Ford dealership will be making a right turn out of the site and should not be impacted by the proposed refuge island.

On the north side of the road, it is recommended that the two existing driveways to the overflow lot are narrowed to 24 feet wide. Narrowing the drives will make the pedestrian crossings shorter, increasing safety. Narrowing the drives also gives space to install curb ramps for the proposed pedestrian crossings in order to meet ADA requirements. At the western end of the lot, narrowing the existing driveway by shifting the western edge will allow for a new guardrail installation that will allow for a future connection to the existing shared use path. Narrowing of the eastern driveway by shifting to the west allows us to have more room to install ADA ramps at the proposed pedestrian crossing. Shifting the western driveway to the east will also improve sight distance pulling out of the driveway.

Because the proposed median refuge island is located in close proximity to the eastern drive it may make left-turns out of the site difficult, therefore it is recommended that this driveway be converted to a one-way entrance and the western drive be converted to a one-way exit. On the south side of the road in front of the Ford Dealership where there is a wide open curb cut adjacent to a vehicle parking area, it is recommended that additional pavement markings be added to delineate the outside edge of the bike lane. This will help delineate the lane and hopefully deter any drivers from pulling off the road in the bike lane in front of the Ford dealership to look at the vehicles on display. There is a small portion of the curb on the south side of the road at the proposed crosswalk in front of the Ford Dealership that should be

pushed back to make room for a full 5 foot wide bike lane in this area. It will be the responsibility of the Ford Dealership to construct the sidewalk and WCR between the roadway and the building.

A future sidewalk is shown on the conceptual plans between the Ford Dealership and the Thrift store. At this time the City has indicated that they do not believe that this sidewalk is necessary on the south side of the road. It is recommended that the city monitors the pedestrian traffic along Miracle Mile and installs a sidewalk between the Ford dealership and Listen Thrift Store if there is enough foot traffic to warrant it.

Miracle Mile Plaza

Western Driveway – Approx STA 109+20, Figure 7



Figure 7 - Miracle Mile Plaza Western Driveway

It is recommended that the driveway be narrowed and striped with a double yellow centerline and a stop bar on the exit side. The narrowing and striping is intended to increase safety by creating a shorter pedestrian crossing and also deter cars from cutting into the plaza at an angle. A single lane exit is recommended for increased safety.

Center Driveway – Approx STA 111+75, Figure 8



Figure 8 - Miracle Mile Plaza Center Driveway

It is recommended that the location, size, and pavement markings of this driveway remain the same. However, adjacent to the driveway it is recommended that raised islands are constructed to better delineate the parking and drive aisles and improve circulation.

Eastern Driveway – Approx STA 115+25, Figure 9



Figure 9 - Miracle Mile Plaza Eastern Driveway

It is recommended that the location, size, and pavement markings of this driveway remain the same. However, adjacent to this driveway it is recommended that the Dunkin Donuts drive-thru exit lane be re-

aligned to provide better site circulation given its close proximity to the plaza exit driveway. Vehicles leaving Dunkin Donuts may make a left or right out of the drive-thru and utilize any of the plaza drives.

In the western area of the Plaza parking lot near the cinema it is recommended that the existing row of parking be removed, and the parking rows between Dunkin Donuts and the cinema be extended. This will create a more defined traffic flow to and from the driveway.

Observations in the Price Chopper parking lot during the site visit revealed that drivers generally do not drive up and down the parking aisles, but rather cut across the parking rows to get to and from the eastern driveway. Therefore, it is recommended that raised medians be constructed at the end of the existing parking rows within the Price Chopper parking lot to better define the access aisle across the front of the site and help reduce the volume of vehicles that cut through the lot in this area. This will improve overall circulation and safety which should reduce the number of crashes within the parking area that were noted in the crash analysis section above.

To offset the loss of parking spaces within the parking lot due to the above improvements, it is possible to construct additional parking spaces between the Eastern Driveway and the entrance only driveway at the eastern limits of the property. In total 33 spaces are shown to be removed as a result of the proposed improvements and 33 new spaces created, resulting in a net loss of 0 parking space within the plaza.

The city made us aware that the Price Chopper property had submitted a new parking lot layout plan that was approved by the city but never constructed. Since these plans were not provided to us, we developed a simplified layout to work with existing conditions as close as possible to provide some safety and operations improvements along the front of the lot.

Entrance only Driveway – Approx STA 117+50, Figure 10



Figure 10 - Miracle Mile Entrance Only Driveway

There is a sidewalk slated to be constructed across this driveway by the city in the near future. It is recommended that the proposed crosswalk be realigned to be perpendicular to the driveway in order to provide the shortest pedestrian crossing. At the intersection of the driveway and parking lot there is a row of trees that limit sight distance looking right. Therefore, it is recommended that one of the trees be removed to improve sight distance and provide increased safety.

Listen Thrift Store and Donation Center

The current site circulation and parking lot of the thrift store is confusing and very congested especially with the creation of the drop off aisle. In order to attempt to improve the operations and safety of this property it is recommended that the parking lot in front of the building be converted to one-way and the parking spots in front of the store be converted to angled parking. The reason for providing angled parking is to better define the one way direction of traffic circulation in front of the building. When reviewing which direction the one way traffic should flow in front of the building several factors were considered and are identified in the pros and cons list outlined below.

Traffic travels one way heading east in front of the building (western drive is converted to a one-way entrance)

Pros

- Pedestrians crossing the driveway from the sidewalk connection from the bus stop have a shorter path across the drive aisle to gain access to the striped aisle into the building (aka ADA parking space).
- Reducing the amount of traffic exiting the western drive reduces congestion at this location.
- If all the angled parking is full patrons and circulate into the parking area to the west of the building without needing to go out onto Miracle Mile.

Cons

- This option results on the loss on 5 parking spaces because of the angled parking layout
- If vehicles enter the main driveway (eastern) and head to the east side of the building to park and all of the parking spaces are full, then they must exit the main driveway back onto Miracle Mile and enter the western driveway to try to find an angled parking space. This maneuver increases the volume of traffic entering and exiting the site which causes more congestion and decreases safety at both driveway entrances.

Traffic travels one way heading west in front of the building (western drive is converted to a one-way exit)

Pros

- This option results on the loss of 3 parking spaces which is two less than the previous alternative
- If a patron enters the western driveway to find an angled parking space and there are none they do not need to exit back onto Miracle Mile to get to the other eastern side of the parking lot.

Cons

- Pedestrians crossing the driveway from the sidewalk connection from the bus stop have a longer path across the drive aisle to gain access to the striped aisle into the building (aka ADA parking space).
- If the parking spaces in front of the building are full, then drivers must exit the western driveway onto Miracle Mile and re-enter the main driveway to look for a parking space on the east side of the building. This increases the congestion along Miracle Mile between the driveways.

South side of the roadway from Listen Thrift Store heading east to Poverty Lane

There are no major changes proposed on the south side of Miracle Mile between Listen Thrift Store and Poverty Lane. The roadway in this area is wide enough to support restriping the roadway and providing the travel lane, dual use left turn lane and bicycle lane widths noted above except for the last 130 feet of the roadway at Poverty Lane. The widening in this area varies from 0-3 feet.

If they City ever desires to install sidewalks along this side of the roadway to connect the bus stop to Poverty Lane, they would need to consider installing a closed drainage system to allow for removal of the large, paved swale shown in Figure 11. In addition, the city would need to consider relocating utility poles to avoid conflicts or push the sidewalk further into the side slope which could results in the need for retaining walls or steeper slopes on private property.



Figure 11 - Paved Swale

North side of the roadway from Price Chopper heading east to Poverty Lane

Currently there is no sidewalk in this area. However, the city has indicated that from approximately Station 118+00 to 127+00 there is a proposed sidewalk that will be constructed by the city in the near future. The proposed sidewalk plans were reviewed and one of the comments is the adjustment of the crosswalk across the one-way entrance to the Plaza noted above.

It is also recommended that the City consider providing pavement markings or different surface material to delineate the pedestrian walking path across the gas station driveway from the proposed sidewalk into the Tractor Supply site to connect to what appears to be an internal sidewalk shown in Figure 12.

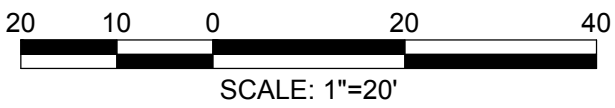
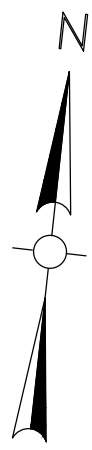


Figure 12 - End of Sidewalk in Tractor Supply Driveway

Probable Opinion of Construction Costs

A conceptual cost estimate was completed for the recommended work. The cost of milling and overlaying the corridor and then re-striping it was not included in the cost, as it is assumed that this will be done with the upcoming waterline project. The sidewalk on the south side of the roadway between the Ford Dealership and Listen Thrift Store was not included in the cost as the city has indicated they do not believe this sidewalk is necessary at this time. The cost of the sidewalk on the north side of the roadway, east of the Price Chopper to Poverty lane was not included.

The conceptual opinion of probable construction cost for the work shown on the conceptual plan for both roadway and site improvements is in the range of \$195,000-\$210,000.



LEGEND:
SSLW = SINGLE SOLID LINE WHITE
SSBY = SINGLE SOLID W/ BROKEN LINE YELLOW
DBLY = DOUBLE SOLID LINE YELLOW
SBLW = SINGLE BROKEN LINE WHITE

Project:
MIRACLE MILE CORRIDOR STUDY
LEBANON, NH



Weston & Sampson

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No.	Date	Description

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Reviewed By: JWS

Approved By: JWS

W&S Project No.: ENG 22-1147

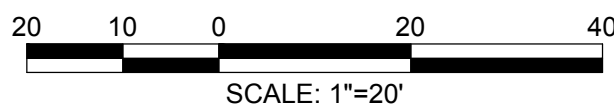
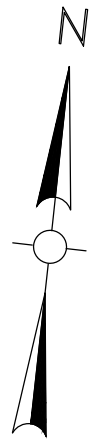
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**MIRACLE MILE
CONCEPT PLAN 1**

Sheet Number:

CP1



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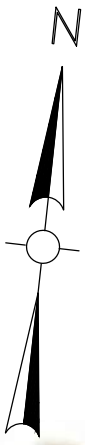
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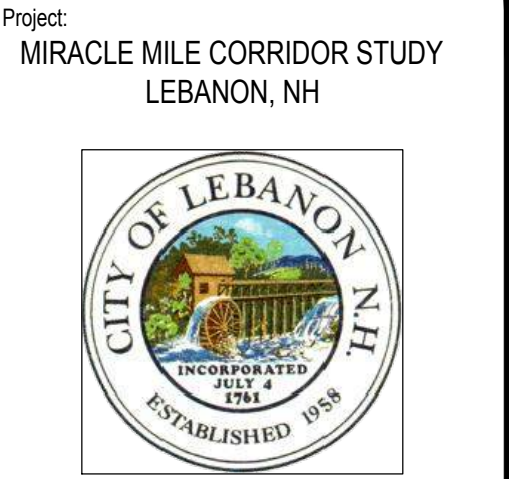
**MIRACLE MILE
CONCEPT PLAN 2**

Sheet Number:

CP2



MIRACLE MILE PLAZA / PRICE CHOPPER PARKING SUMMARY
SPACES REMOVED: 33
SPACES ADDED: 33
NET: ±0 PARKING SPACES



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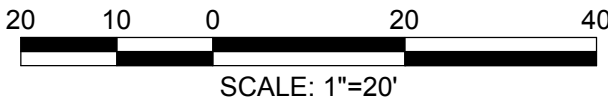
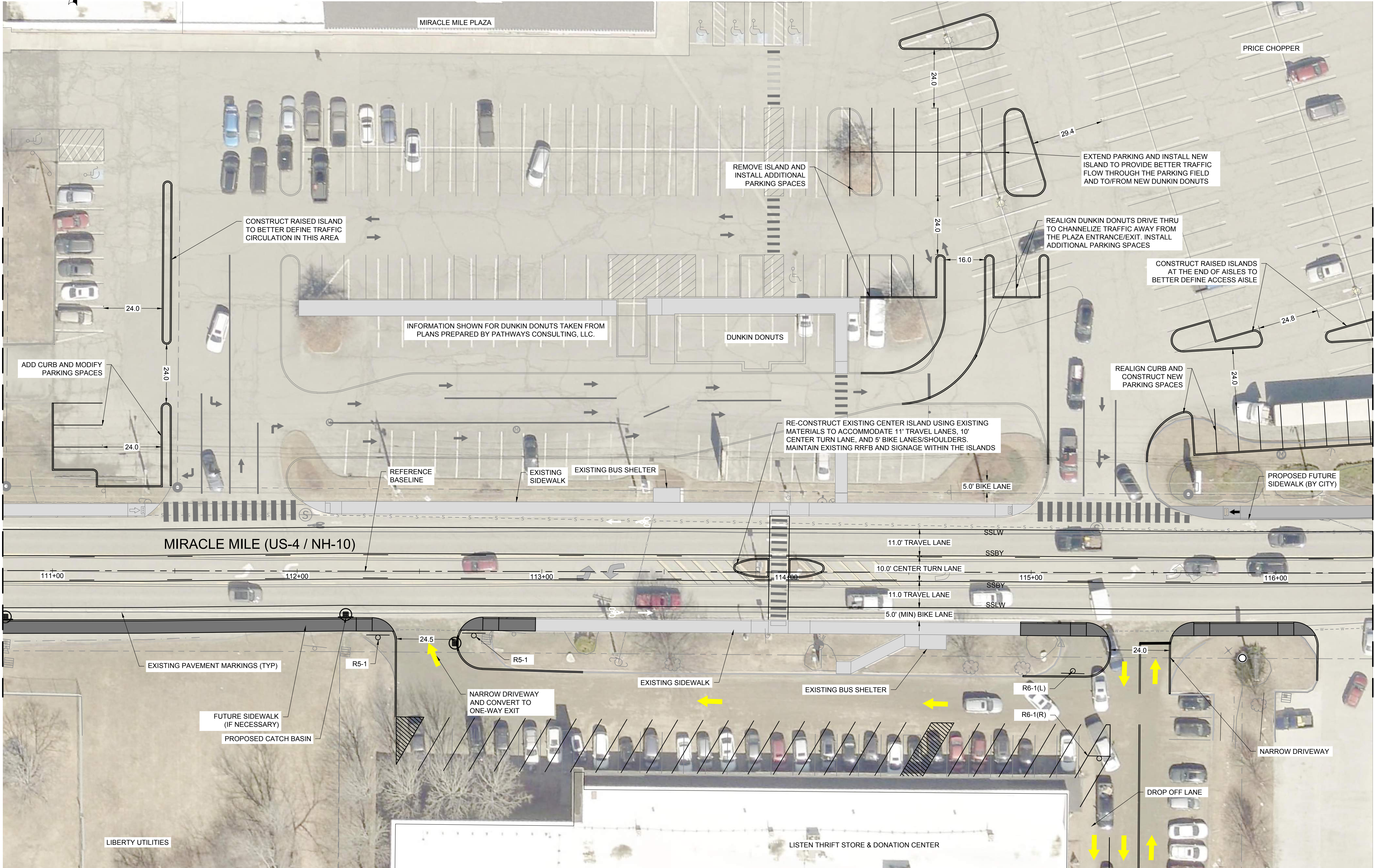
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CONCEPT PLAN 3**

Sheet Number:
CP3

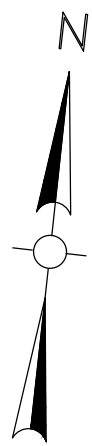
MATCHLINE SEE SHEET CP3

MATCHLINE SEE SHEET CP4

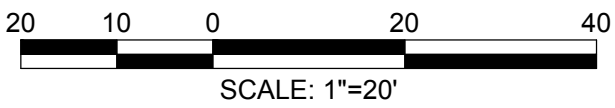


"LISTEN THRIFT STORE" PARKING SUMMARY
SPACES REMOVED: 29
SPACES ADDED: 26
NET: -3 PARKING SPACES

LEGEND:
SSLW = SINGLE SOLID LINE WHITE
SSBY = SINGLE SOLID W/ BROKEN LINE YELLOW
DBLY = DOUBLE SOLID LINE YELLOW
SBLW = SINGLE BROKEN LINE WHITE



MIRACLE MILE PLAZA / PRICE CHOPPER PARKING SUMMARY
SPACES REMOVED: 33
SPACES ADDED: 33
NET: ±0 PARKING SPACE



LEGEND:
SSLW = SINGLE SOLID LINE WHITE
SSBY = SINGLE SOLID W/ BROKEN LINE YELLOW
DBLY = DOUBLE SOLID LINE YELLOW
SBLW = SINGLE BROKEN LINE WHITE

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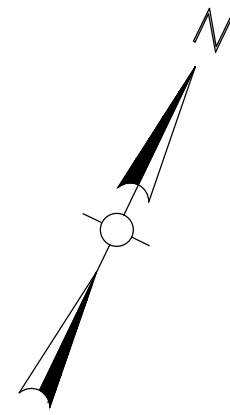
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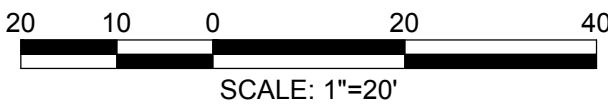
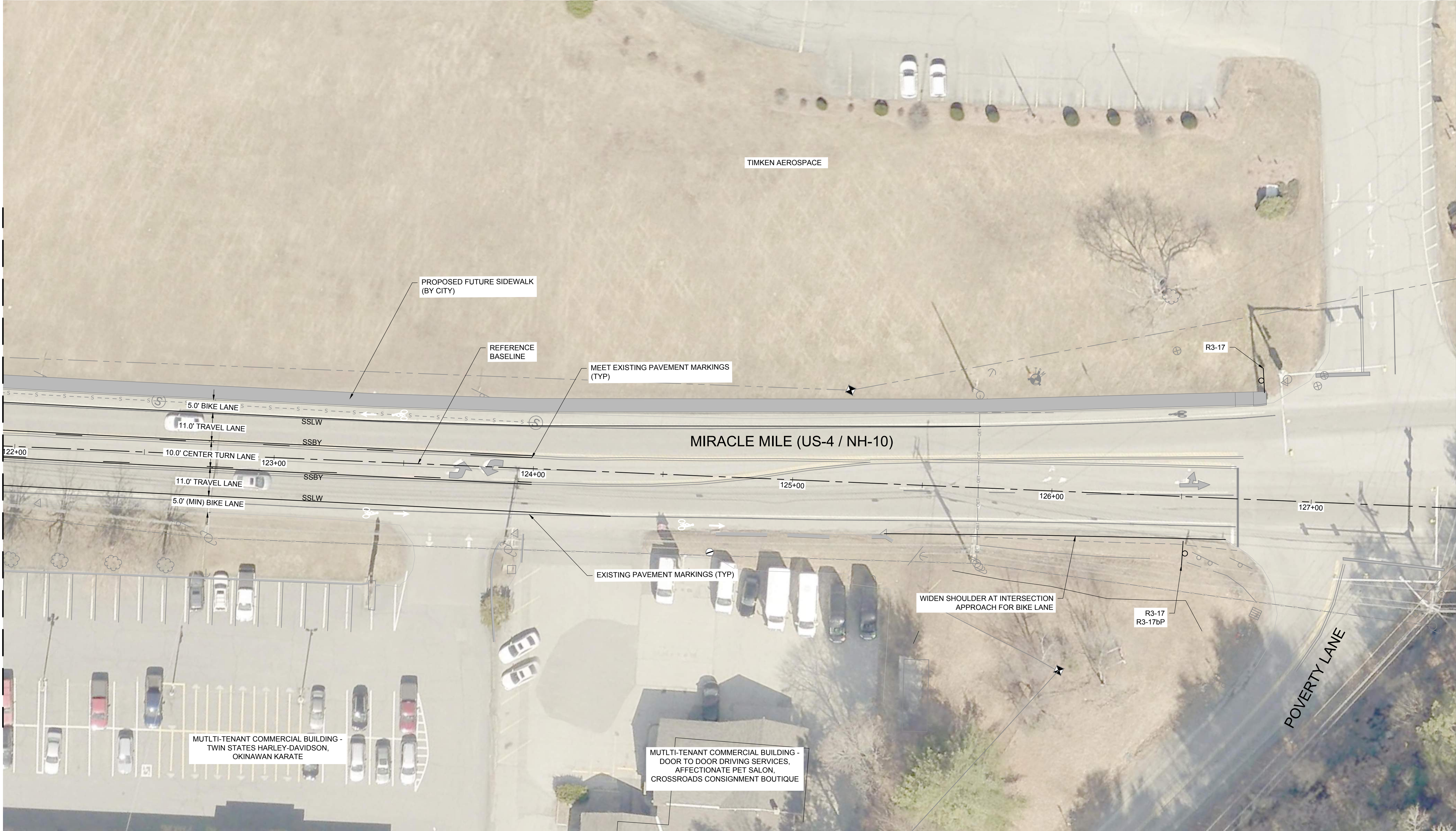
**MIRACLE MILE
CONCEPT PLAN 4**

Sheet Number:

CP4



MATCHLINE SEE SHEET CP4



LEGEND:
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SSBY = SINGLE SOLID W/ BROKEN LINE YELLOW
DBLY = DOUBLE SOLID LINE YELLOW
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**MIRACLE MILE
CONCEPT PLAN 5**

Sheet Number:

CP5