



KEENE CITY COUNCIL
Council Chambers, Keene City Hall
January 2, 2025
7:00 PM

ROLL CALL

PLEDGE OF ALLEGIANCE

MINUTES FROM PRECEDING MEETING

- December 19, 2024

A. HEARINGS / PRESENTATIONS / PROCLAMATIONS

1. Presentation of Retirement Resolution - Harry McKelvey
2. Public Hearing - Amendments to Land Development Code - Building Heights in the Commerce District - Ordinance O-2024-19-A

B. ELECTIONS / NOMINATIONS / APPOINTMENTS / CONFIRMATIONS

1. Confirmations - Ashuelot River Park Advisory Board, Conservation Commission, Energy and Climate Committee, Heritage Commission, and Trustees of Trust Funds/Cemetery Trustees

C. COMMUNICATIONS

1. Kenneth and Diane Hitchcock - Request for No Tractor-Trailer Traffic Sign - Intersection of Water and Woodland Streets
2. Keene Downtown Group - Request to Use City Property - Ice and Snow Festival - February 1, 2025
3. Jon Loveland - Continued Concerns over the Downtown Infrastructure Project
4. Jon Loveland - Downtown Infrastructure Project - Construction Management - Duration, Phasing and Sequencing

D. REPORTS - COUNCIL COMMITTEES

1. Recommendations Regarding Invasive Species Education and Management - Conservation Commission
2. Tim Pipp/Beeze Tees Screen Printing - Proposal to Add the Necessary Infrastructure to Accommodate Banners Across Main Street
3. Request for a Marked Crosswalk at the Intersection of West Street and Pearl Street
4. Heritage Commission - Design Details in the Downtown Infrastructure Project
5. Approval of Final Design Details for Downtown Infrastructure Project (excludes approved roadway, sidewalk, and bike Lane physical layouts)

E. CITY MANAGER COMMENTS

F. REPORTS - CITY OFFICERS AND DEPARTMENTS

1. Statement of Interest Filings - City Clerk

G. REPORTS - BOARDS AND COMMISSIONS

1. Downtown Bike Rack Inventory - Bicycle Pedestrian Path Advisory Committee

H. REPORTS - MORE TIME

I. ORDINANCES FOR FIRST READING

1. Relating to Class Allocation and Salary Schedule
Ordinance O-2025-01
2. Relating to Boards and Commissions
Ordinance O-2025-02
3. Relating to Master Boxes
Ordinance O-2025-03
4. Relating to Installation of a Stop Sign on Jennison Street
Ordinance O-2025-04

J. ORDINANCES FOR SECOND READING

K. RESOLUTIONS

1. Relating to Appropriations for Tree Removal Work
Resolution R-2025-01
2. In Appreciation of Merri E. B. Howe Upon Her Retirement
Resolution R-2025-02

3. Relating to Keene Roadway Safety Action Plan of 2025
Resolution R-2024-44

L. TABLED ITEMS

1. Rules of Order Amendment - Section 26. "Review of Items of Business"

NON PUBLIC SESSION

ADJOURNMENT

A regular meeting of the Keene City Council was held on Thursday, December 19, 2024. The Honorable Mayor Jay V. Kahn called the meeting to order at 7:00 PM. Roll called: Kate M. Bosley, Laura E. Tobin, Michael J. Remy, Randy L. Filiault, Robert C. Williams, Edward J. Haas, Philip M. Jones, Andrew M. Madison, Kris E. Roberts, Jacob R. Favolise, Bryan J. Lake, Catherine I. Workman, Bettina A. Chadbourne, Mitchell H. Greenwald, and Thomas F. Powers were present. Councilor Jones led the Pledge of Allegiance.

MINUTES FROM PRECEDING MEETING

A motion by Councilor Greenwald to adopt the minutes of the December 5, 2024, meeting as presented was duly seconded by Councilor Bosley. The motion carried unanimously with 15 Councilors present and voting in favor.

ANNOUNCEMENTS

The Mayor and Council formally congratulated Assistant City Attorney, Amanda Palmeira, on being chosen as the new City Attorney following a search process that began in August 2024. She will begin as City Attorney on March 1, 2025. Next, the Mayor reminded the Council of a Workshop on the Rules of Order on Tuesday, January 28, 2024 at 6:00 PM, and asked Councilors to let him know of any specific topics of interest. Lastly, the Mayor reminded Councilors of the Council's Holiday Party after this meeting hosted at the official campus residence of Keene State College President Melinda Treadwell, with the Keene State College cabinet present. To not keep the host waiting, the Mayor intended to expedite the consideration of the Council Committee reports during this meeting.

CONFIRMATIONS – AIRPORT DEVELOPMENT AND MARKETING COMMITTEE, ASHUELOT RIVER PARK ADVISORY COMMITTEE, BUILDING BOARD OF APPEALS/HOUSING STANDARDS BOARD OF APPEAL, CONGREGATE LIVING AND SOCIAL SERVICES LICENSING BOARD, CONSERVATION COMMISSION, HISTORIC DISTRICT COMMITTEE, HUMAN RIGHTS COMMITTEE, KEENE HOUSING, PARTNER CITY COMMITTEE, PLANNING BOARD, TRUSTEES OF TRUST FUNDS/CEMETERY TRUSTEES

CONFIRMATIONS – BICYCLE/PEDESTRIAN PATH ADVISORY COMMITTEE, BUILDING BOARD OF APPEALS/HOUSING STANDARDS, CONSERVATION COMMISSION, ENERGY AND CLIMATE COMMITTEE, PARTNER CITY COMMITTEE, ZONING BOARD, ZONING BOARD OF ADJUSTMENT

Mayor Kahn re-nominated the following members to serve a 2nd term to the following City boards and committees. To the Airport Development and Marketing Committee: Elizabeth Bendel, as a regular member, with a term to expire Dec. 31, 2027; Kristopher Radder, as an alternate member, with a term to expire Dec. 31, 2027; Nathan Jacobs, changing from a regular to an alternate member, with a term to expire Dec. 31, 2027. To the Ashuelot River Park Advisory Board: Arthur Winsor, changing from a regular to an alternate member, with a term to expire Dec. 31, 2027. To the Building Board of Appeals/Housing Standards Board of Appeal: Doug Brown, as a regular member, with a term to expire Dec. 31, 2027. To the Congregate Living and Social Services Licensing Board: Andrew Oram, as a regular member, with a term to expire to expire Dec. 31, 2027; and Allison Welsh, as a regular member, with a term to expire to

expire Dec. 31, 2027. To the Conservation Commission: Kenneth Bergman, changing from a regular to an alternate, with a term to expire Dec. 31, 2025; Thomas Haynes, as an alternate member, with a term to expire Dec. 31, 2027. To the Historic District Commission: David Bergeron, as an alternate member, with a term to expire Dec. 31, 2027. To the Human Rights Committee: Gina Burke, as a regular member, with a term to expire Dec. 31, 2027. To Keene Housing: Susan Shaw, as a regular member, with a term to expire Dec. 31, 2029. To the Partner City Committee: Eric Weisenberger, as a regular member, with a term to expire Dec. 31, 2027. To the Planning Board: Harold Farrington, as a regular member, with a term to expire Dec. 31, 2027. Trustees of Trust Funds: Martha Curtis, as a regular member, with a term to expire Dec. 31, 2027.

Mayor Kahn provided the following new nominations to various City boards and committees. To the Bicycle Pedestrian Path Advisory Committee: Dwight Fisher, as a regular member, with term to expire Dec. 31, 2027. To the Building Board of Appeals/Housing Standards Board of Appeal: Stephen Tarbox, as an alternate member, with a term to expire Dec. 31, 2027. To the Conservation Commission: the Clerk noted that Robert Milliken's nomination was originally before the Council as a regular member; however, the nomination is being presented to the Council this evening, as an alternate member, with term to expire Dec. 31, 2027; and Gary Flaherty, as a regular member, with term to expire Dec. 31, 2027. To the Energy and Climate Committee: Maureen Nebensahl, as a regular member, with term to expire Dec. 31, 2027. To the Partner City Committee: Gerald Kuhn, as a regular member, with term to expire Dec. 31, 2027. To the Zoning Board of Adjustment: Tad Schrantz, as a regular member, with term to expire Dec. 31, 2027; Adam Burke, as an alternate member, with term to expire Dec. 31, 2027; and Stephen Tarbox, as an alternate member, with term to expire Dec. 31, 2027.

A motion by Councilor Greenwald to confirm the nominations was duly seconded by Councilor Bosley. The motion carried unanimously on a roll call vote with 15 Councilors present and voting in favor.

NOMINATIONS – ASHUELOT RIVER PARK ADVISORY BOARD, CONSERVATION COMMISSION, ENERGY AND CLIMATE COMMITTEE, HERITAGE COMMISSION, AND TRUSTEES OF TRUST FUNDS/CEMETERY TRUSTEES

Mayor Kahn nominated the following individuals to various City boards and committees. To the Ashuelot River Park Advisory Board: Leslie Casey, as a regular member, with a term to expire Dec. 31, 2027. To the Conservation Commission: Deborah LeBlanc, re-nominated to change from an alternate to a regular member, with a term to expire Dec. 31, 2027; Sparky Von Plinsky, re-nominated to change from a regular to an alternate member, with a term to expire Dec. 31, 2025. To the Energy & Climate Committee, Lisa Maxfield, re-nominated as a regular member, with a term to expire Dec. 31, 2027; Timothy Murphy, as a regular member, with a term to expire Dec. 31, 2027; Steve Larmon, as a regular member, with a term to expire Dec. 31, 2027. To the Heritage Commission: Cauley Powell, re-nominated to change from a regular to an alternate member, with a term to expire Dec. 31, 2027. To the Trustees of Trust Funds and Cemetery Trustees, Malcolm Katz, as a regular member, with a term to expire Dec. 31, 2027.

Mayor Kahn tabled the nominations until the next regular meeting.

COMMUNICATIONS – COUNCILOR ED HAAS – ANNUAL REPORTS OF BOARDS AND COMMISSIONS

A communication was received from Councilor Ed Haas, requesting that the City Council initiate a process for all boards and commissions of the City to submit annual reports of their activities, accomplishments, challenges, goals, and ideas for the coming year. This reporting would improve the visibility of the work done by these public bodies and keep all Councilors aware of their accomplishments and goals. Mayor Kahn referred the communication to the Finance, Organization & Personnel Committee

MSFI REPORTS – PETITION – REDUCTION OF SPEED LIMIT – UPPER ROXBURY STREET; ROUTE 9 – OLD SULLIVAN ROAD INTERSECTION; RED PINE SCALE; PROPOSED CHANGES TO WINCHESTER STREET, BETWEEN WILSON AND MAIN STREETS

The Mayor noted that in order to expedite the meeting this evening, he would request that the Council consider consolidating all of the Committee recommendations from each Standing Committee. He would request that the Committee chairs explain the recommendation and the background of each report before a single motion and vote were entertained. He added if a Councilor wished to have one item removed from this group, they should identify the specific committee report.

A Municipal Services, Facilities & Infrastructures Committee report (D1) read, unanimously recommending placing the reduction of speed limits on more time and that the City Manager be directed to evaluate potential solutions to reduce speed and improve safety on Roxbury St. A Municipal Services, Facilities & Infrastructures Committee report (D2) read, unanimously recommending that the City Manager be directed to carry out the recommendations identified by the City Engineer. A Municipal Services, Facilities & Infrastructures Committee report (D3) read, unanimously recommending accepting the Red Pine Scale presentation as informational. A Municipal Services, Facilities & Infrastructures Committee report (D4) read, unanimously recommending that the report on the proposed changes on Winchester St. be accepted as informational with the expectation that Public Works will provide updates on the progress in the proposal.

A motion by Councilor Greenwald to carry out the intent of the Committee reports (D1-D4) was duly seconded by Councilor Filiault. The motion carried unanimously with 15 Councilors present and voting in favor.

FOP REPORTS – ACCEPTANCE OF INVESTNH PLANNING & ZONING GRANT TO EXPAND THE 79-E TAX INCENTIVE PROGRAM; 2022 HOMELAND SECURITY GRANT PROGRAM REALLOCATION OF FUNDS; ADOPTION OF A NEW VOTE TABULATION SYSTEM FOR ELECTIONS; TRANSPORTATION HERITAGE TRAIL – AUTHORITY TO ACCEPT DRAINAGE EASEMENTS; REALLOCATION OF CAPITAL FUNDS – FINDINGS BUILDING DEMOLITION; PROFESSIONAL SERVICES CONTRACT – ENGINEERING SERVICES FOR THE KEY ROAD DRAINAGE REPLACEMENT PROJECT;

PROFESSIONAL SERVICES CONTRACT – ENGINEERING SERVICES FOR THE STORMWATER LINING PROGRAM

A Finance, Organization & Personnel Committee report (D5) read, unanimously recommending that the City Manager be authorized to do all things necessary to accept and expend grant funds in the amount of \$34,860 from the Invest NH Municipal Planning & Zoning Grant Program for the purpose of hiring a consultant to expand the City's 79-E program. A Finance, Organization & Personnel Committee report (D6) read, unanimously recommending that the City Manager be authorized to do all things necessary to apply for, accept and expend the 2022 Homeland Security Grant Program reallocation of funds in the amount of \$18,902. A Finance, Organization & Personnel Committee report (D7) read, unanimously recommending that the Voting Works electronic ballot counting device be approved as the vote tabulation system for Keene's elections and that the Secretary of State be notified as required by RSA 656:40. A Finance, Organization & Personnel Committee report (D8) read, unanimously recommending that the City Manager be authorized to do all things necessary to negotiate, accept, and record Drainage Easements across private properties as required for the construction of the Transportation Heritage Trail - Phase I. A Finance, Organization & Personnel Committee report (D9) read, unanimously recommending that the City Manager be authorized to reallocate the unencumbered funds in the amount of approximately \$162,490 from the recently completed Skate Park Improvement Project to the Findings Building Demo Project (65J0008B). A Finance, Organization & Personnel Committee report (D10) read, unanimously recommending that the City Manager be authorized to do all things necessary to negotiate and execute a professional services agreement with SLR International Corporation (SLR) in the amount of \$91,100, as bid, for the design and permitting of the Key Road Drainage Improvements Project (75M00625). A Finance, Organization & Personnel Committee report (D11) read, unanimously recommending that the City Manager be authorized to do all things necessary to negotiate and execute a professional services agreement with NHDES and Kleinfelder in the amount of \$180,400 to expend the awarded NHDES ARPA grant for the engineering services, design and permitting of the Stormwater Lining Program.

A motion by Councilor Powers to carry out the intent of the Committee reports (D5-D-11) was duly seconded by Councilor Remy.

Councilor Haas posed a question about report D9 on the reallocation of funds from the State Park to the Findings building work. He understood that the Skate Park was partially funded by donations and asked if there was clarification between the donations and the City's investment. The City Manager replied that all donations went to the construction of the Skate Park and the City had to apply for additional grant funds through the NH Land and Community Heritage Investment Program (LCHIP). She said that originally, those funds were a part of the Pat Russell Park project, and now, they were re-allocated for the demolition of the Findings building. The Deputy City Manager, Andy Bohannon, said that was incorrect and should be switched, stating that the InvestNH funding for demolition should be going to the Skate Park project. Mayor Kahn paused discussion of item D9 and pulled it from the overall vote of the Committee reports for further discussion.

Councilor Favolise asked about report D7, noting that when the grant was originally approved, his understanding was that a portion of it was to go toward one4all voting systems to comply with the new NH statute. The week before this meeting, the City Clerk had informed him that there had been some developments at the State level, so Councilor Favolise asked for an update. The City Clerk, Patty Little, replied that on December 18, the Clerks were invited to Concord for demonstrations of a new accessible voting system (AVS). She said it appeared that the State had recognized that the legislation it passed in 2024, which required that an accessible voting system be used at all local and school elections was an unfunded mandate to communities. The State is now considering whether they should purchase new AVS systems that could be shared by both the State and local communities. The State brought in three vendors for this demonstration for the disabled community as well as local clerks in the area. The City Clerk thought it was probably best that the City had not expended any money, and staff were waiting and hoping that the legislature would rectify this and fully fund this new mandate.

If pulling item D9, Councilor Jones asked if that would impact a vote on item D5. The City Manager said no, D5 would be fine; that was the grant application to InvestNH for the City's current 79-E area as well as considering whether to add some residential 79-E zones. Mayor Kahn recalled that as a State Senator, he brought forth this 79-E amendment that allows for up to four units to use the 79-E tax credit, which is a municipally issued tax credit program for renovations of one- to four-unit housing projects.

The motion to carry out the intent of FOP Committee reports D5–D8 & D10–D11 carried unanimously.

Discussion ensued on report D9. Deputy City Manager Bohannon explained that when the City received Land and Water Conservation Funds (LWCF) that matched the fundraising donations, the LWCF were used to match the InvestNH grant, which incurs all the remaining Skate Park project (i.e., the sidewalk and fence). He said the Invest NH money should go into the LWCF project. So, Deputy City Manager Bohannon said that report D9 should be amended to read: "...to the Findings Building Demo Project (65J0008A)." The City Attorney said that this would move it to the Findings building demolition project, which is connected to the Skate Park through fencing and Deputy City Manager Bohannon said that was correct; this would help to complete the Skate Park project. Mr. Bohannon said the LWCF would be needed for demolition.

A motion by Councilor Remy to amend the motion to adopt FOP Committee report D9 to send the funds to Project #65J0008A was duly seconded by Councilor Powers and the motion carried unanimously.

Councilor Haas was concerned that the fundraisers would not be clear on where their money was going but he trusted that the FOP Committee covered that in their work, so he thanked them for that. The motion to carry out the intent of the amended FOP report D9 carried unanimously.

CITY MANAGER COMMENTS

The City Manager was proud to announce that the City of Keene was named a "Housing Champion" by the State of New Hampshire Department of Business and Economic Affairs. This

prestigious designation honors communities that have demonstrated a strong commitment to expanding housing opportunities for residents of all income levels, and it also makes the City eligible to apply for two grants opening in January 2025. The City of Keene was one of 18 communities statewide to receive designation. The scoring process considered several significant steps that Keene had taken to address housing needs, including:

- Several major updates to the City’s Zoning and Land Use Regulations to encourage more housing development, including the adoption of a Cottage Court Overlay District and changes to rules for accessory dwelling units.
- Recent and planned improvements to transportation, walkability, and water/sewer infrastructure to support housing development. For example, the downtown infrastructure project will significantly increase the reliability of critical infrastructure needed to support housing.

Of the 18 communities in the State that received this designation, 5 scored above 100 (star), and Keene scored the highest (128) in the State, including 30 points for Public Works (maintenance and infrastructure programs). The City Manager congratulated Senior Planner, Mari Brunner, and Planner, Evan Clements, for their work on the application articulating all of Keene’s capital planning and zoning changes. Mayor Kahn agreed that it was a high honor and well deserved.

REPORTS – ACCEPTANCE OF DONATION

A memorandum read from the Finance Director/Treasurer, Merri Howe, recommending that the City Council accept the donation in the amount of \$351.29 from the Keene Kiwanis for the purchase of 8 balance bikes to support Keene Parks & Recreation Toddler “Movement Monday” programming and that the City Manager be authorized to use the donation as specified by the donor.

A motion by Councilor Powers to accept the donation in the amount of \$351.29 from the Keene Kiwanis for the purchase of 8 balance bikes to support Keene Parks & Recreation Toddler “Movement Monday” programming and that the City Manager be authorized to use the donation as specified by the donor was duly seconded by Councilor Remy. The motion carried unanimously with 15 Councilors present and voting in favor.

REPORT – ACCEPT FUNDING THROUGH THE 2024 AFG GRANT

A motion by Councilor Powers to suspend the Rules of Order to act upon the application for the 2024 AFG Grant in the amount of \$569,126 was duly seconded by Councilor Remy. The motion carried unanimously on a roll call vote with 15 Councilors present and voting in favor.

Mayor Kahn requested background from the Fire Chief, Jason Martin. Chief Martin explained that the reason for not following the regular process was a very short time frame for the application deadline the day after this meeting. He asked the City Council to authorize the City Manager to do all things necessary to apply for, accept, execute, and expend the 2024 AFG grant in the amount of \$569,126. If applied, there would be a 10% required match to the grant. This grant would not cover fringe benefits for any compensation. If awarded the grant, the Fire Department would be requesting a supplement of \$80,387 in the FY26 budget to cover the gap. Chief Martin explained two major components of the grant that staff wanted to apply for: (1)

training and (2) replacement of equipment. The training program would train members to the technician level in confined space rescue. With the number of new firefighters hired over the past few years, the Department had lost most of its technicians through attrition. He said it is essential to properly train the newer members so the Department can continue to provide this service. Chief Martin explained that the Department also needed to replace two ambulance power cots and add power load systems to go with those cots. There was currently no funding source to replace those items, and they were at the end of their service life. The training component would cost \$255,858 and the equipment would be \$313,267, for the grand total of \$569,126.

Mayor Kahn asked who the grantor was. Chief Martin said the Assistance to Firefighter Grant (AFG) through the Federal Emergency Management Agency (FEMA).

Councilor Jones said that 10% would be approximately \$56,000, but he thought he heard the Chief said \$83,000, so he asked about the breakdown. Chief Martin explained that when he did the price for the confined space rescue—backing out the fringe benefits—the total cost was \$25,558. With the fringe benefits that were a part of the supplement he needed to ask for FY26, that itself would be \$67,033, which when added to the \$56,912, would total \$123,945. At this time, Chief Martin had a line item in his budget for a grant match for \$43,599, which was how he arrived at the supplement request of \$80,000 short.

If successful, Councilor Haas asked when the grant would be awarded, and Chief Martin said September.

Councilor Madison asked how many firefighters needed to be trained to technician level at this time and where the training would occur. Chief Martin said that the price listed was to bring a specialized training company to Keene for the training. He said that the intent was to train every member of the Department even if they had already taken the training, even the Chief. He thought it would be a good refresher for someone like him who had not received that training in approximately 20 years.

A motion by Councilor Powers to carry out the intent of the recommendation was seconded by Councilor Remy and unanimously adopted with 15 Councilors present and voting in favor.

PB-PLD REPORT – RELATIVE TO RESIDENTIAL PARKING REQUIREMENTS – ORDINANCE O-2024-20-A

A report was received from the Joint Committee of the Planning Board and the Planning, Licenses & Development Committee. The Planning Board unanimously found that Ordinance O-2024-20-A was consistent with the Master Plan. The Planning, Licenses & Development Committee unanimously requested that the Mayor set a public hearing for Ordinance O-2024-20-A. Mayor Kahn set the public hearing for Thursday, January 16, 2025, at 7:05 PM.

PB-PLD REPORT – RELATING TO SIDE AND REAR SETBACKS IN THE DOWNTOWN EDGE ZONE – ORDINANCE O-2024-24-A

A report read from the Joint Committee of the Planning Board and the Planning, Licenses & Development Committee. The Planning Board found on a vote of 4–1 that this proposed change

to Ordinance O-2024-24-A was consistent with the 2010 Master Plan. The Planning, Licenses & Development Committee unanimously requested that the Mayor set a public hearing for Ordinance O-2024-24-A. Mayor Kahn set the public hearing for Thursday, February 6, 2025, at 7:00 PM.

MORE TIME – MSFI REPORT – RELATING TO DESIGNATED LOADING ZONES AND BUS LOADING ZONES ORDINANCE O-2024-16; PLD REPORTS – POLICY ON THE DISCHARGE OF FIREWORKS; SIGN CODE MODIFICATIONS REQUESTED BY MAYOR KAHN; RULES OF ORDER – SECTION 15 – VOTING AND CONFLICT OF INTEREST; & FOP REPORT – AND A PROPOSAL THAT THE CITY COUNCIL CONSIDER A DELAY IN THE DOWNTOWN INFRASTRUCTURE PROJECT

A Municipal Services, Facilities & Infrastructure Committee report read, recommending that Ordinance O-2024-16 be placed on more time. A Planning, Licenses & Development Committee report read unanimously recommending placing any consideration of fireworks regulations on more time to allow staff to develop alternatives. A Planning, Licenses & Development Committee report read, recommending placing Sign Code modifications requested by Mayor Kahn on more time. A Planning, Licenses & Development Committee report read, recommending placing Section 15 of the Rules of Order “Voting and Conflict of Interest” on more time. A Finance, Organization & Personnel Committee report read, recommending that the request to delay the downtown project be placed on more time until the next FOP meeting. Mayor Kahn granted more time for all the reports.

ORDINANCES FOR SECOND READING – RELATING TO AMENDMENTS TO THE CITY OF KEENE LAND DEVELOPMENT CODE, PERMITTED USE IN THE DOWNTOWN CORE AND COMMERCE DISTRICTS – ORDINANCE O-2023-16-C

A Planning, Licenses & Development Committee report read on a vote of 3–1, recommending the adoption of Ordinance O-2023-16-C. Mayor Kahn filed the report.

Mayor Kahn recognized an outstanding conflict of interest on file from Councilor Greenwald from when this Ordinance was first submitted and asked if the Councilor wanted to address it. Councilor Greenwald did not think the conflict needed to be amended but said that drive through windows should be included in the conflict since they were included in the Ordinance. Since he has a downtown business and this Ordinance would impact downtown businesses, Councilor Greenwald still thought his conflict was appropriate, so he wished to remain recused. Hearing no objections from the Council, Mayor Kahn granted the recusal.

A motion by Councilor Bosley to adopt Ordinance O-2023-16-C was duly seconded by Councilor Jones.

Councilor Bosley summarized the Committee report, recalling that the PLD Committee and the Joint Committee of the Planning Board and PLD Committee had spent a lot of time working on this in fine detail, so she did not belabor the intricacies. She pointed out that the Joint Committee removed the electric vehicle charging stations and established some streets in the City that it thought would be appropriate for this type of use: West Street west of Island Street, Winchester

Street south of Island Street, Main Street south of Route-101 and north of Silent Way, as well as Key Road, Ashbrook Road, and Kit Street. Councilor Bosley added that—as Councilor Greenwald mentioned—this Ordinance would also restrict drive throughs to the Commerce and Commerce Limited Districts, and with a Special Exception in the Downtown Growth District. Councilor Bosley thought the one objection from the PLD Committee was more so in principle than related to the information contained in the Ordinance.

Councilor Jones said he was the dissenting vote on the PLD Committee because he does not believe that gaming should be a special entity but should be treated like all other forms of entertainment, like bowling or a movie theater. He thought that this action was the City picking on and restricting this one entity. He said this gaming could benefit local non-profits, which could earn 35% of the gaming profits, whereas if these businesses opened in Walpole or Claremont instead, the Keene non-profits would not gain. Councilor Jones recalled the first public hearing on this Ordinance, when he said two local restaurant owners begged the Committee not to put restrictions on gaming because it would bring more life to the community, which he supported. He cited the example of downtown Springfield, MA, 15 years prior, when it was known for less desirable activities and businesses (e.g., go-go bars and pornographic activities). Now, he said there were furniture and jewelry stores there, and even a supermarket, which had not been the case in downtown Springfield since the 1960s. Councilor Jones said that charitable gaming could change and bring money into a community. He said that Keene should use it as an anchor and not a deterrent. So, he would vote against this.

Councilor Bosley wanted to point out—without touching on her personal feelings about gaming—that since the City started working on this Ordinance, the State of NH had passed a moratorium on Historic Horse Racing Licenses which is tied to a specific community. Keene's local casino, for example, cannot take its HHR License to an adjacent community and use it there. The State presented the City with information clarifying that these casinos need these HHR Licenses to be profitable; while there are charitable gaming licenses for table games, in order for them to really be profitable, they do need the HHR component, which also means they need to be a certain size. At this time, there was a moratorium on HHR. Councilor Bosley said the Committee really worked to clarify the understanding that Keene already had a licensed casino in the community that might want to expand at some point, and to define where in the community that expansion would make sense. By adopting this, she thought there would be a very narrow scope until the moratorium is lifted.

Councilor Remy referred to Councilor Jones' example of Springfield, MA, and said that while there were more stores there—specifically in the casino—the hotel he has to stay at when when he is in the Springfield area for work now has to escort guests to that part of the city. So, he cautioned against using Springfield, MA, as an example. Councilor Madison agreed, noting that he grew up there and he recalled when the downtown was not a safe place to go. He did not agree that the casino was positive for downtown Springfield, MA. He noted how divisive that casino had been since its proposal, and said it was still unpopular. Councilor Madison said that violence, drugs, and many of the problems Councilor Jones mentioned were problems are still there.

Councilor Filiault said that with all due respect to Councilor Bosley and the PLD Committee, he would also be voting against this because he also did not think that a legal business—just like a bar or restaurant—should be restricted any more than those other legal businesses. While it would not be ideal to him to have small casinos downtown, he did not think the Council should be the morality police; every person has different opinions and morals. Councilor Filiault recalled some uses the Council had allowed downtown over time that were considered potentially bad for the City or public at the time: tattoo shops, pawn shops, outdoor seating at restaurants, alcohol at outdoor seating at restaurants, and an axe throwing business. Now, for example, the City was expanding sidewalks downtown to accommodate the outdoor seating for restaurants. As with the cases he cited, he said demand would take care of it.

Councilor Favolise thanked Councilor Bosley and the Joint Committee for their long-term hard work on this Ordinance and for continuing to fine tune it. He said he would vote in support because the best part of this Ordinance for him was that it would restrict casinos from the downtown. His position on the Ordinance had nothing to do with Councilors Jones' and Fililault's points about whether the City should allow gambling and everything to do with parking and traffic patterns, and the need to turn over parking spaces downtown. Councilor Favolise was glad that his least favorite part of the Ordinance was taken out, which was the electric vehicle charging stations. So, while parts of the Ordinance that he thought were too restrictive continued to make him uncomfortable, he was willing to vote in support at this time to have something adopted.

Councilor Haas wanted to speak about this positively, stating that this Ordinance would follow what the City does with Zoning everywhere, as things are created for different places, different things, different shapes, and different sizes. He said this would not restrict gaming at all. In fact, he said this would make it more positive by decreasing the electric vehicle charging requirement, decreasing the maximum size required, and other features to encourage gaming. He supported the City developing this industry like any others. He said the items that Councilor Filiault mentioned were a part of the evolution that happens during growth and change. Councilor Haas said finally codifying this would be positive.

Councilor Williams disagreed with the characterization that charitable gaming facilities are like any other business. He said this is predatory casino gambling that would be siphoning from Keene's economy and sending it to MA or CT. In addition, he cited how many people are hurt by gambling. While it might only be 1% of gamblers, he said those 1% have family, friends, and people who care about them. He knew of situations in which entire college savings accounts were spent on casino gambling, which he said would now be happening in Keene. So, Councilor Williams would vote in opposition.

Councilor Roberts heard the comment about the Council not being the morality police but he stated that people elect Councilors with the expectation that they will look out for the City, its economic growth, and its citizen's quality of life. He said he had been to many places around the country where people say to let the free market go. For example, he referred to the totally free market "combat zone" in Boston that he called really dangerous. He said the Council could not be prejudice without justification for some businesses but would still need to protect the people

of the community it was elected to. He heard the argument that adults could make the decision not to go to these establishments, but he questioned who would keep kids from going there, or who would protect kids when someone stumbles out of one of these businesses drunk. Councilor Roberts said the Council needed a way to allow the free market but not at the expense of quality of life or safety of the community.

Councilor Workman said she would vote in favor of this because she felt like it was a fair compromise. She felt that the PLD Committee had worked hard and listened to the Council's concerns. While she was not originally in favor of making any changes, she felt this was a compromise, and to Councilor Filiault's point, she said that the Council could choose to update this in a few years if these facilities open and are successful, as it had with sidewalk cafés serving alcohol.

Councilor Remy called the question.

Mayor Kahn thanked Councilor Bosley for her long-term work on this Ordinance.

On a roll call vote of 12–2, motion to adopt Ordinance O-2023-16-C carried. Councilors Jones and Filiault voted in opposition. Councilor Greenwald abstained.

ORDINANCE FOR SECOND READING – RELATING TO AMENDMENTS TO THE LAND DEVELOPMENT CODE, DEFINITION OF GAMING FACILITIES – ORDINANCE O-2023-17-B

A Planning, Licenses & Development Committee report read, unanimously recommending the adoption of Ordinance O-2023-17-B. Mayor Kahn filed the memorandum. A motion by Councilor Bosley to adopt Ordinance O-2023-17-B was duly seconded by Councilor Jones.

Councilor Jones said that because Ordinance O-2023-16-C was adopted, it would not work without this definition, so the Council should adopt this.

The motion to adopt Ordinance O-2023-17-B carried unanimously on a roll call vote with 15 Councilors present and voting in favor.

ORDINANCES FOR SECOND READING – RELATING TO MAINTENANCE PARKING RESTRICTIONS – ORDINANCE O-2024-21

A Municipal Services, Facilities & Infrastructure Committee report read, unanimously recommending the adoption of Ordinance O-2024-21. A motion by Councilor Greenwald to adopt Ordinance O-2024-21 was duly seconded by Councilor Remy. The motion carried unanimously on a roll call vote with 15 Councilors present and voting in favor.

ORDINANCES FOR SECOND READING – RELATING TO GILBO AVENUE PARKING RESTRICTIONS – ORDINANCE O-2024-22

A Municipal Services, Facilities & Infrastructure Committee report read on a vote of 1–3, failing to recommend the adoption of Ordinance O-2024-22. Mayor Kahn filed the memorandum.

Mayor Kahn noted that Councilor Greenwald abstained from the vote on this Ordinance at Committee and asked if the Councilor wished to present a conflict to the City Council. Councilor Greenwald explained that he was dealing with a strange situation. The area in question abutted his downtown building and the individual who came forward with the request for this parking change had an issue with one of his tenants, and he was caught in-between. So, he respectfully asked to be recused. Hearing no objections from the Council, Mayor Kahn granted the recusal.

A motion by Councilor Filiault to adopt Ordinance O-2024-22 was duly seconded by Councilor Remy. The motion failed on a roll call vote of 1–13. Councilor Powers voted in the minority. Councilor Greenwald abstained.

ORDINANCES FOR SECOND READING – RELATING TO JUNETEENTH EXCEPTION TO PARKING REGULATIONS – ORDINANCE O-2024-23

A Municipal Services, Facilities & Infrastructure Committee report read, recommending the adoption of Ordinance O-2024-23. Mayor Kahn filed the memorandum. A motion by Councilor Greenwald to adopt Ordinance O-2024-23 was duly seconded by Councilor Tobin. The motion carried unanimously on a roll call vote with 15 Councilors present and voting in favor.

ORDINANCES FOR SECOND READING – RELATING TO PERSONNEL – ORDINANCE O-2024-25

A Finance, Organization & Personnel Committee report read, recommending the adoption of Ordinance O-2024-25. Mayor Kahn filed the memorandum. A motion by Councilor Powers to adopt Ordinance O-2024-25 was duly seconded by Councilor Remy. The motion carried unanimously on a roll call vote with 15 Councilors present and voting in favor.

RESOLUTION – RELATING TO DEVELOPMENT ON CLASS VI HIGHWAYS AND PRIVATE ROADS – RESOLUTION R-2024-43

A Planning, Licenses & Development Committee report read, recommending the adoption of Resolution R-2024-43. Mayor Kahn filed the memorandum. A motion by Councilor Bosley to adopt Resolution R-2024-43 was duly seconded by Councilor Jones.

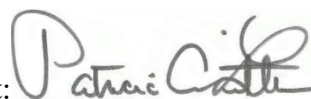
Councilor Jones said he had supported this since the ban was placed in the Land Development Code. He thought this would be important for expansion. He added that if this had been passed sooner, the City would have ranked even higher on the Housing Champion scoring process.

The motion to adopt Resolution R-2024-43 carried unanimously with 15 Councilors present and voting in favor.

ADJOURNMENT

There being no further business, Mayor Kahn adjourned the meeting at 8:11 PM.

A true record, attest:



City Clerk



PUBLIC HEARING

Amendment to Land Development Code - **Building Heights in the Commerce District**

Notice is hereby given that a Public Hearing will be held before the Keene City Council relative to Ordinance O-2024-19-A "**Relative to Building Height in the Commerce District.**" The Petitioner, City of Keene Community Development Department, proposes to amend Section 5.1.4 of the Land Development Code (LDC) to modify the allowed height within the Commerce District to be three stories or 42 feet and amend Section 8.3.1 of the LDC to incentivize residential development in the Commerce District by permitting a height of up to six stories or 82 feet for "dwelling, multifamily" with limitations.

The Ordinance is available for inspection in the office of the City Clerk during regular business hours.

HEARING DATE: January 2, 2025

HEARING TIME: 7:00 pm

HEARING PLACE: Council Chambers, Keene City Hall

Per order of the Mayor and City Council this fifth day of December, two thousand and twenty-four.

Attest:

City Clerk



CITY OF KEENE NEW HAMPSHIRE

ITEM #B.1.

Meeting Date: January 2, 2025

To: Mayor and Keene City Council

From: Mayor Jay V. Kahn

Through: Patricia Little, City Clerk

Subject: **Confirmations - Ashuelot River Park Advisory Board, Conservation Commission, Energy and Climate Committee, Heritage Commission, and Trustees of Trust Funds/Cemetery Trustees**

Council Action:
In City Council December 19, 2024.
Tabled until the next regular meeting.

Recommendation:

Attachments:
None

Background:
I hereby nominate the following individuals to serve on the designated board or commission:

Ashuelot River Park Advisory Board	
Leslie Casey, regular (slot 4)	Term to expire Dec. 31, 2027
Sullivan New Hampshire	
Conservation Commission	
Deborah LeBlanc, regular (slot 1) - re-nomination	Term to expire Dec. 31, 2027
Sparky Von Plinsky, alternate (slot 11) - re-nomination	Term to expire Dec. 31, 2025
Energy & Climate Committee	

Lisa Maxfield, regular (slot 11) - re-nomination	Term to expire Dec. 31, 2027
Timothy Murphy, regular (slot 10)	Term to expire Dec. 31, 2027
40 Green Acres Road	
Steve Larmon, regular (slot 7)	Term to expire Dec. 31, 2027
201 Chesterfield Road	
Heritage Commission	
Cauley Powell, alternate (slot 11) re-nomination	Term to expire Dec. 31, 2027
Trustees of Trust Funds and Cemetery Trustees	
Malcolm Katz, regular (slot 5)	Term to expire Dec. 31, 2027
55 Wilder Street	



CITY OF KEENE NEW HAMPSHIRE

ITEM #C.1.

Meeting Date: January 2, 2025

To: Mayor and Keene City Council

From: Kenneth and Diane Hitchcock

Through: Patricia Little, City Clerk

Subject: **Kenneth and Diane Hitchcock - Request for No Tractor-Trailer Traffic Sign
- Intersection of Water and Woodland Streets**

Recommendation:

Attachments:

1. Communication_Hitchcock_Redacted

Background:

Mr. & Mrs. Hitchcock have had recent property damage done by a tractor-trailer to property at 100 Woodland Avenue on March 20, July 2, and December 16, 2024. They are requesting a sign to be put up at the corner of Water Street and Woodland Avenue prohibiting tractor-trailers.

December 23, 2024

To: Mayor Jay Kahn and the City Councilors,

Due to the recent property damage done by a tractor trailer to property at 100 Woodland Ave. on December 16, 2024 and 2 previous incidents (March 20, July 2) we ask that a sign be put up at the corner of Water St. and Woodland Ave. prohibiting tractor trailers.

Respectively submitted,

Diane M. Hitchcock

Kenneth M. Hitchcock

Kenneth and Diane Hitchcock

100 Woodland Ave.
[REDACTED]

Linda + Chris Nelson
357 Water St
[REDACTED]

Edward + Kathryn Hall
99 Woodland Ave
Keene, N.H.
[REDACTED]

Mary Delisle
70 Woodland Ave
[REDACTED]

Barbara Staples
109 Woodland Ave
Keene NH 03431
[REDACTED]

DAVID + TINA Roy
63 WOODLAND AVE
KEENE, N.H.
[REDACTED]

Michael Marciniak
89 Woodland Ave
Keene N.H. (cd1A Daker)
[REDACTED]

Domenic Anthony Terrantello
84 Woodland Ave.
Keene, NH 03431
[REDACTED]

Rocks 1+2 run over
and dislodged by TT unit
#3 dragged down the
road by the TT unit



* Rock was in the
space in the foreground
and ended up in the
middle of the road about
30' ~~down~~ away. It was
rolled off to the side
by 2 police officers







CITY OF KEENE NEW HAMPSHIRE

ITEM #C.2.

Meeting Date: January 2, 2025

To: Mayor and Keene City Council

From: Mark Rebillard Keene Downtown Group Chair

Through: Patricia Little, City Clerk

Subject: **Keene Downtown Group - Request to Use City Property - Ice and Snow Festival - February 1, 2025**

Recommendation:

Attachments:

1. Communication_Ice and Snow Festival_Redacted

Background:

Mr. Rebillard has submitted the annual request for a license to conduct the 2024 Ice and Snow Festival on City property on February 1, 2025.

January 15, 2024
Mayor Jay Kahn
Keene City Council
3 Washington Street
Keene, NH 03431

Dear Mayor Kahn and City Council,

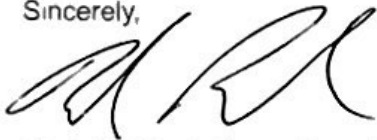
On behalf of the Keene Downtown Group I ask the City of Keene to grant a license for the 22nd annual Keene Ice & Snow Festival to be held on Saturday, February 1, 2025.

The Keene Downtown Group is a 501c6 all volunteer organization that has hosted the Keene Ice & Snow Festival as well as other community events such as the Keene Art Walk and The Keene Music Festival.

The Keene Ice & Snow Festival provides a free day of family fun in mid-winter. Scheduled activities include, a children's train ride, a snow slide, free hot chocolate at 12 participating downtown merchants, a scavenger hunt, campfire smores, character actors, face painting, a sugar on snow station and art from 12 ice carvers whose sculptures are illuminated to shine like christmas tree bulbs into the evening

Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mark Rebillard', written in a cursive style.

Mark Rebillard, Keene Downtown Group Chair
PO Box 80
Keene, NH 03431
[REDACTED]



CITY OF KEENE NEW HAMPSHIRE

ITEM #C.3.

Meeting Date: January 2, 2025
To: Mayor and Keene City Council
From: Jon Loveland
Through: Patricia Little, City Clerk
Subject: **Jon Loveland - Continued Concerns over the Downtown Infrastructure Project**

Recommendation:

Attachments:

1. Communication_Loveland Letter - Downtown Infrastructure Project - Safety and Bias 122324_Redacted
2. Communication_Loveland_Attachment_Separated Bicycle Lanes and Bicycle Crashes
3. Communication_Loveland_Attachment from 10_17_2024 CC Agenda Packet_with Watermark

Background:

Mr. Loveland is continuing to raise concerns with the downtown infrastructure project. In this letter, Mr. Loveland is critiquing a communication that the Council received from the Bicycle Pedestrian Path Advisory Committee. In this most recent letter, he identified several issues regarding both the process and substance of the letter from this advisory committee of the City. In addition, Mr. Loveland is also encouraging the Council to consider all relevant industry and municipal standards of practice and relevant NH statutes and case law regarding negligence should an accident, collision, or negative health-related outcome occur due to the Council's activities and plans on the downtown infrastructure project conducted to-date.

Monday, December 23, 2024

Hon. Jay Kahn
Mayor
3 Washington St.
Keene, NH 03431

cc: Mitchell H. Greenwald, Chair, Municipal Services, Facilities & Infrastructure Committee
Kate M. Bosley, Chair, Planning, Licenses and Development Committee
Thomas F. Powers, Chair, Finance, Organization and Personnel Committee
Elizabeth A. Dragon, City Manager
Patricia A. Little, City Clerk
Randy L. Filiault, Vice-Chair, MSFI Committee

via Electronic Mail

RE: Downtown Keene Infrastructure Project – Safety of Bike Lanes and Bias

Dear Mayor, City Clerk, Select Members of the Keene City Council, and City Manager:

The issue of bicycle lanes in Downtown Keene is not a simple one, and clearly not as simple as the City Council, City Management, or their consultant have treated it. This issue was previously evaluated by your predecessors on the Keene City Council, whom I can assure you had similar capability, credibility, and circumstances, but arrived at different outcomes. This issue might be of legal interest. I can also assure you that from a planning perspective on this issue, absolutely nothing relevant and substantive has changed for a small, zero growth, rural town in a Northern, temperate, climate. The current City Council and City management should ask themselves why 2020 and thereafter is any different?

CITIZEN ADVISORY COMMITTEE ANALYSIS

A letter from the Chair of one of the City's Citizen Advisory Committees (Item #G.1, p. 26, October 17, 2024, City Council Meeting Agenda package) was recently submitted regarding the safety of your proposed bicycle lanes. There are a number of issues with this letter, regarding both process and substance. A bike lane is not a true protected bike lane simply because a consultant, or a city staffer, or a city councilperson labels it so.

The author (Mr. Sam Jackson) did not include any citations or bibliographic information for his references. We (all readers) are all left to wonder if his analyses and conclusions are correct, because we cannot fact check either against the past or current work of the City and compare the City's work to his cited works. This is the fallacy of asking a layperson or a citizen committee to conduct professional analysis and have it pass comparative muster. You will note in every one of my correspondences with the City, I have provided full and complete bibliographic references (thank you Lois Stabler) so that you all, including Mr. Jackson, can access and review and attempt to rebut my conclusions. He clearly availed himself of this opportunity, but did not provide for and enable any of his readers to do the same.

The critical issue in Mr. Jackson’s assessment is that it cannot be determined if the studies he cited and the conclusions he drew are valid on the basis of *similitude*. In other words, were the studies he cited performed on bike lanes that were, in fact, similar enough to the “design” the City has approved such that their conclusions are applicable?

Mr. Jackson *selectively* re-analyzed the data to suit his own purposes. Again, he makes no specific reference to any data, but if he is referring to Figure 5.7 (p. 26, “Crash Count on bicycle facility by type in city of Denver from 2013 to 2019”), I am having difficulty duplicating his math. However, and regardless, had he been intellectually honest and similarly parsed the given data, which does include a very specific set of data applicable to Main Street in Keene (the presence of “sharrows”), he would still find that the new bike lanes are making cyclists in Keene **LESS SAFE** than when using the “sharrows” that exist on Main Street.

Even more relevant is additional data in the report that Mr. Jackson conveniently overlooked. Here is a table from the report (p. 38):

Table 7.1 Bicycle crash at intersection analysis

	Separated bicycle facility	Shared road
Total crash count	444	379
Intersection crash count	332	285
Number of Intersection	1197	2173
Intersection crash count / Number of Intersection	0.277	0.131

Mr. Jackson also clearly makes two serious errors in analysis when attempting to recast Mr. Chang’s conclusions to suit his own purposes in defining “safe.” The first way illustrates the issues noted above regarding similitude, as Mr. Chang had a clear framework and set of definitions for bike lanes as detailed in his Table 2.1 (Separated Bike Lanes) and Table 2.2 (Shared Bike Lanes). The City’s proposed bike lane does not meet the definition of “Cycle Track” such that it would allow Mr. Jackson to further separate those statistics and enable his own personal form of safety analysis. The definition of “Cycle Track” was given as “Cycle tracks provide an exclusive bikeway separated from motor vehicle and pedestrian traffic by a median, planter strip, and/or a parking lane.” (FDM, 2011, p. 20). There is nothing *exclusive* about the City’s design when it comes to both pedestrian crossing/encroachment and vehicular turning movements. One must only survey the examples given in Mr. Chang’s thesis and the FDM report to understand that what he evaluated and what the City designed are not similar.

This data, unequivocally, and based on a much larger sample size than is present in Downtown Keene, shows how and why the design approved by the City Council makes cyclists **LESS SAFE** (by a ratio of more than 2;1). *The City is simply ignoring the presence of intersections and crossings in their rush to seek grant funds and make changes in the absence of any proven demand for these facilities.*

SIMILITUDE

I seriously doubt that the cited studies by Mr. Jackson are similar, (considering, and notwithstanding Councilpersons E.J. Haas' dubious remonstrance to me) and to illustrate this point, I will provide two examples that have been staring the City in the face from the beginning of this project and this process. The first is the case of Washington Street. We could all agree that the bike lane previously provided on Washington Street is a true, "dedicated" bike lane (and it is clearly NOT a true, "protected" bike lane). Assume the City conducted a study of comparative bicycle, vehicle, and pedestrian safety for this bike lane for a moment. I am certain that study would have demonstrated the safety improvements for all users of that particular bike lane. The question becomes how to use that putative study and where can it properly be extrapolated and applied?

I am also certain we could all agree that, provided there is adequate space, the bike lane configuration on Washington Street could be implemented on either Court Street or Roxbury Street with comparable results and benefits. However, it would be wholly inappropriate to apply the results of such a study of Washington Street to justify bike lanes on either West Street or Main Street for plainly obvious reasons; they simply are not similar. They are not similar with respect to vehicle use, pedestrian use, bicycle use, street configuration, and density of parking, commercial, or residential uses.

The second example is found in a set of photos provided by Stantec to the City showing what they ostensibly assert are examples of similar implementations of the bike lane "design" the City has adopted (June 11, 2024, to Presentation to City Council, p.13).

Review all four (4) of these photos very closely. Do any of them simultaneously exhibit:

- A dense row of over 200 diagonal parking spaces?
- A dense row of businesses, some with residences above?
- The density of pedestrian use equivalent to Downtown Keene (at least 40 pedestrians for every cyclist)
- A majority of intersections and vehicle turning movements with no traffic signal?
- A multitude of obstructed views?



In fact, none of these photos are similar in totality to the design the City has adopted. In fact, these photos are all deficient in similitude in multiple key areas related to safety that are present in the City design, so you cannot assume any improvements in safety these photos attempt to portray will also be experienced in the design the City adopted. Safety in one respect is no guarantee of safety when you have to consider 4-5 issues, or more, simultaneously in a dense, circumscribed, downtown space.

In short, like these two examples I have provided, there is no evidence that the citations and analysis provided by Mr. Jackson, the City, or their consultant. are similar and therefore applicable to the design the City has approved for Downtown Keene.

BIAS

Furthermore, Mr. Jackson (and I suspect a fair number of City staffers and City Councilpersons) are allowing bias to influence their actions and analysis. It is wholly irrelevant if Mr. Heine is a former racing cyclist, as he is not suggesting that bicycle lanes be used at racing speeds nor was he quoted for issues related to speed. If a cyclist is run over and killed by a truck due to obstructed views, it matters not if the cyclist was moving 7 mph or 25 mph. I spoke to my friend and corporate attorney (who lives in Alexandria, VA with an office on “Eye” Street in

Washington, DC), and it is likely that none of the parties in the incident referenced in the Forbes article were at fault. What is relevant is Mr. Heine's experience as a cyclist and that he is editor-in-chief of major publication devoted to cycling. What is relevant is that he was cited for commenting on design features that are present in the design the City has adopted.

It is also wholly irrelevant, by itself, that the author, Diana Furchtgott-Roth, is a staffer for what we all would agree is a conservative think tank (the Heritage Foundation) or a think tank that drafted a set of government-wide policy recommendations (Project 2025). Here is her biographical information Mr. Jackson is attempting to diminish:

"I'm Director of Energy, Climate, and Environment at the Heritage Foundation, and I teach Transportation Economics at George Washington University. From 2019 to 2021 I was Deputy Assistant Secretary for Research and Technology at the US Department of Transportation. I directed the Department's research portfolio, including automated and electric vehicles, connected vehicles, platooning trucks, intelligent transportation systems, Smart Cities, and solutions to GPS hacking and spoofing. I've also served as acting assistant secretary for economic policy at the U.S. Department of the Treasury, chief economist at the U.S. Department of Labor, and chief of staff of the Council of Economic Advisors. I'm the author or editor of six books on economic policy, most recently *United States Income, Consumption, Wealth, and Inequality* (Oxford University Press, 2020). My economics degrees are from Swarthmore College and Oxford University."

As a former senior civil servant who began her career in the **Reagan administration** and was a senior staffer in the USDOT, Ms. Furchtgott-Roth is clearly qualified and experienced enough to comment on cycling safety issues. I suggest that Mr. Jackson (and the City) confine himself (themselves) to substantive issues related to the subject matter at hand, and instead, justify his statement that the facts she presented are an "outlier" in any way, because the express issues she was writing about and she and others cited are present in the design the City adopted.

I'm as progressive as anyone reading this letter is likely to meet (I read and understood Lawrence v. Texas **in real-time**) based on many persons I know, including in graduate school, and at the same time, I remember Sen. Warren Rudman (as well as Sen. John Warner and Sen. Richard Lugar). My friend and lawyer was hired into the Nixon Administration and knew Henry Kissinger, and constantly gives me negotiating advice based on his experiences. He personally knew John Warner and his wife (and not Elizabeth Taylor).

Regardless of what you think about Ms. Furchtgott-Roth or any of these men, I understand their politics and I would still like to meet them, and I would like to have a substantive discussion with Ms. Furchtgott-Roth. I suggest the City do the same. And I have a piece of advice for Mr. Jackson and the City. If you want to argue with someone like Ms. Furchtgott-Roth, do so very carefully and substantively, and more substantively than Mr. Jackson's furtive concerns.

I am a fan of Professor Daniel Kahneman and his work on bias and heuristics, and I strongly suggest all members involved in this effort (City Manager, Mayor and Council, and City

Attorney) read his work. He is a Nobel Prize winner and the author of the popular book “Thinking Fast and Slow,” which is based on part of his (and Amos Tversky’s) many years of research. I cannot find any instance where the City sought out current and contemporaneous information regarding bike lane safety. A review of the City’s and City Council’s minutes and actions clearly exhibit what Dr. Kahneman called the “Planning Fallacy,” which originally addressed optimism in schedule durations and was expanded to include the underestimation of costs and risks of future plans and the overestimation of the benefits of those same plans. The City is clearly guilty of all these easily foreseeable issues by experienced, unbiased, professionals. Any honest assessment of past statements, costs, schedules, and other process-related issues is 1) incontrovertible from an evidentiary standpoint (lacking), and 2) clear evidence of bias that will withstand independent scrutiny.

In addition, the one thing Main Street in Keene NH does have are “sharrows,” so if Mr. Jackson wishes to bifurcate Mr. Chang’s statistics, he also needs to separate out the “sharrow” and “shared roadway” numbers as he sought to do for the “separated” bike lane data. Like many things the City is currently doing, the City has thought too fast, and arrogantly, regardless of what “safe-harbor” they may believe they have.

My lawyer also pointed me to another common refrain now being voiced as ostensibly similar “protected” bicycle lanes are being proposed in Washington DC (on Connecticut Avenue, see embedded link):

“District residents [have pointed out](#) that the plan does not account for how people would cross the bike lanes to board buses; where rideshare vehicles, taxis, and delivery drivers would pick up and drop off people and goods; how people who use wheelchairs and walkers would cross the bike lanes; and where trucks would unload. All these functions pose dangers to cyclists because potential obstacles require them to stop suddenly or to swerve out of the bike lane and into traffic.”

LIABILITY

Had the City’s public outreach effort and analysis met professional standards and practice (review your records for independent, identifiable, and separate feedback from the public), you would have adequate project feedback, or even recognize the value of the public feedback you do have. The quote above and the associated studies presented above and previously clearly show how the City has ignored the safety risks to all user groups involved related to pedestrian crossing(s), vehicle turning movement(s), density, and obstructed view(s). All of the information presented predates any of the City’s related planning efforts for Downtown Keene, and yet is unaccounted for in your planning efforts. I challenge the City to do a comparative and relative word search for the word “safety” in any of your published studies, presentations, videos, or meeting minutes.

Instead, as has been documented, the City has substituted (subsequent to approving a design):

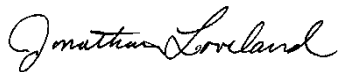
- The opinions of clearly biased previous Committee(s) and Councilpersons,

- The ostensible knowledge gained by the Mayor and a Committee Chair after cycling in Europe,
- The ostensible knowledge gained by a Committee Chair and the City Manager cycling around Keene for a day or two,
- The ostensible knowledge of a City Councilor regarding the physics of bicycle operation, reaction time, and collisions,
- The opinion of a City Council member regarding the equivalency of studies “on all sides,”
- The opinions of several City Councilors regarding traffic lane number and width,
- The opinions of a Citizen Advisory Committee.

None of these activities, nor the activities of the City staff, nor their consultant, are adequate to rebut a charge of negligence should an accident, collision, or negative health-related outcome occur due to your activities and plans conducted to-date.

As I have advised Councilor Filiault multiple times, I suggest the City consult all relevant industry and municipal standards of practice and relevant NH statutes and case law regarding negligence.

Best Regards,



Jonathan P. Loveland, PE
Irvine, CA

[REDACTED]
[REDACTED]

Cc:

Mgreenwald@keenenh.gov
Kbosley@keenenh.gov
Tpowers@keenenh.gov
Edragon@keenenh.gov
Plittle@keenenh.gov
Rfiliault@keenenh.gov

Encl(s):

Keene City Council, Agenda Packet, 10/17/24, Item #G.1

The Relationship between Separated Bicycle Lanes and Bicycle Crashes in Denver, Colorado, Wonsun Chang, University of Nebraska-Lincoln, 2019.

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The Relationship between Separated Bicycle Lanes and Bicycle Crashes In Denver, Colorado.

Wonsun Chang

University of Nebraska - Lincoln, wonsun02@gmail.com

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The relationship between separated bicycle lanes and bicycle
crashes in Denver, Colorado.

by

Wonsun Chang

A THESIS

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Master of Community and Regional Planning

Major: Community and Regional Planning

Under the Supervision of Professor Yunwoo Nam

Lincoln, Nebraska

December, 2019

THE RELATIONSHIP BETWEEN SEPARATED BICYCLE LANES AND BICYCLE CRASHES IN DENVER, COLORADO.

Wonsun Chang, MCRP

University of Nebraska, 2019

Advisor: Yunwoo Nam

Cyclists feel more comfortable when they ride in a bike facility separated from traffic. Therefore, cyclists tend to prefer separated bicycle lanes over other lanes. It follows that cities are increasing the installation of separated bicycle lanes for bicycle utilization and bicycle safety. However, previous research has proven that separated bicycle lanes cause more crashes. Through empirical study, this paper examined the impact of both separated bicycle facilities and shared roads on bicycle crashes and which is safer or dangerous among methods of the separation. This study deals with bicycle accidents in Denver from 2013 to 2019. This research creates bicycle crash data by extracting only bicycles involved in the crash from the traffic accident dataset. And then, using the ArcGIS tool, the bicycle crash spatial is joined to each bicycle facility segment. Therefore, this study generated dataset of a bicycle crashes based on bike facilities. In the next step, a Poisson Rate Regression analysis was conducted in this study (run in SAS 9.4). The result is that a separated bike lane is estimated to increase the average number of crashes by 117% compared to a shared road. The second result showed that a cycle track facility is estimated to increase the average number of crashes 401% compared to a bike lane facility. In conclusion, a separated bicycle facility has more crashes than a shared road. Among separated bicycle facilities, a cycle track, where physically separated facilities were installed, was most likely to cause crashes.

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Chapter 1 Introduction

To be well and healthy, physical activity is important to people. There are various means of physical activity; among them, bicycling is one of the most attractive modes. Cycling produces many individual and public health benefits (Teschke et al., 2012). Also, bicycling is a healthy, environmentally friendly alternative to automobile use (Chen et al., 2012). Kelly, et al. (2014) demonstrates that bicycling reduced the risk of all-cause mortality (an indicator of population health that measures the total number of deaths due to any cause), after adjusting for other physical activity. Cycling had the greatest effect on the risk for all-cause mortality among those with the lowest levels of active behaviors as compared with those with some level of physical activity (Kelly, et al., 2014). It is clear that cycling is a healthy and effective physical activity for people. At the same time, cycling and walking are vulnerable modes of transportation relative to driving motorized vehicles (Chen, et al., 2012). Cyclist safety is a significant factor to encouraging bicycling.

To reduce cyclist's safety concerns, cities have tried to become more bike friendly. People Powered Movement (PPM) (2019) indicated that advocacy groups have been successful in getting cities and towns across the country to adopt the culture of cycling. This article cited Sherwin Arzani, an attorney who handles bicycle accidents in Los Angeles, California. He stated that an increasing number of cities had added safety features such as bike lanes (People Powered Movement, 2019). Bicycle facilities encourage a cyclist's feeling of security and supports a more active cycling environment. It is also made for the safety of all transportation, including the safety of cyclists and pedestrians. Plus, many urban areas are designing versatile complete streets to

accommodate for the increases in bicycle ridership. (National Complete Streets Coalition, 2010). The development and improvement of bicycle facilities contributes to the increase in the number of cyclists. For this reason, among bicycle facilities, the installation of the separated bike facility (SBF) is increasing.

The installation of SBF is directly correlated to increasing number of cyclists. At the same time, an emerging issue is the actual safety of separated bicycle facilities. It may seem obvious that a separated bicycle facility improves the safety of cyclists; however, this is a controversial argument in the field of transportation (Forester, 2001; Pucher, 2001). Forsyth & Krizek (2010) suggest that the main argument against safety claims for separated bicycle facility is that, on balance, actual crash data fails to support claims that separated bicycle facilities are in fact, safer. In recent years, people in the US have been strongly advocating for separated bike paths (cycle tracks) often in the form of a physical barrier (Heine, 2013). According to the Bureau of Transportation Statistics, though, adding protected bike lanes does not essentially make people more likely to ride. Instead, the lanes simply increase people's perception of safety (Bikemunk, 2018). For example, about 13% of cyclists surveyed said they generally felt threatened or unsafe at some point during their last trip, while a slightly smaller 10% of cyclists riding on bike lanes said they felt threatened while riding (Bikemunk, 2018). However, feeling safe and actually being safe are not the same.

Presently, there is a lack of research on the true the impact of bike facility types on bicycle crashes. Plus, there is an absence of research regarding the separation element on the bicycle facility. Hence, this thesis examines whether separation from motorized vehicles, as present in many bicycle facilities has an impact on decreasing the number of

bicycle crashes in Denver, Colorado. This study only analyzes data on bicycle accidents occurring in Denver from 2013 to 2019.

Chapter 2 Literature review

2.1 Promoting safe bicycling environments and bicycle facilities for cyclists

The improvement of bicycle facilities and safe bicycling environments support peoples' choice of cycling as a means of transportation. Prior research has thoroughly investigated the most safe types of bicycle routes and which bike facilities they prefer to use. These prior studies suggest that cyclists prefer bicycle infrastructure separated from traffic. Also, cyclists feel more comfortable in a separated bicycle lane.

Caulfield, Brick, & McCarthy (2012) determined bicycle infrastructure preferences by conducting a survey of 1,941 people employed in businesses participating in "Smarter Travel Workplaces." Caulfield, Brick, & McCarthy (2012) showed that facilities that were segregated from traffic are the preferred form of cycling infrastructure, regardless of cycling confidence. The research by Duthie, Brady, Mills, & Machemehl (2010) reviewed variety of bicycle facility types and configurations. They discovered that creating buffer space between the outer edge of the bicycle lane and the driver side of parked cars is the most effective way of ensuring that bicyclists are protected from parked motor vehicle door zones. Cyclists prefer separated bicycle facilities because they provide cyclists with the confidence that there will not be a collision with other traffic, and no accidental door opening of a car. Plus, individuals, especially women, children and the elderly, prefer to bike separately from motor traffic (Lusk et al., 2011). Moreover, there was similar result from Monsere, Mcneil, & Dill (2012). They evaluated different user perception of two types of separate on-road bicycle facilities (e.g. cycle tracks and buffered bike lanes) in Portland, Oregon. They found that

most cyclists believed that the separated facilities improved safety and reduced dooring concerns compared to a regular bike lane.

2.2 The impact of the built environment and bicycle facility types on bicycle safety

Many studies focus on built environment factors that cause bicycle crashes. Prior studies have examined the relationship between bicycle crashes and various built environment features. Previous research has proven that the features of a built environment are directly related to bicycle safety. For example, Chen & Shen (2016) suggest that improving street lighting can decrease the likelihood of cyclist injuries and posted speed limits are positively correlated with the probability of apparent injury and severe injury or fatality. As such, they suggest lower posted speed limits on streets with both bikes and motor vehicles to promote bicycle safety. They also found that many crashes occur while motorists are turning left and are more likely to result in severe injuries. As for built environment factors, increased employment density is negatively correlated with decreased cyclist injury severity, whereas increased land use mixture is correlated with decreased likelihood of severe injury or fatality. Reynolds et al. (2009) reviewed studies of the impact of transportation infrastructure on bicyclist safety. They found that infrastructure does influence risk of injury and crashes. However, cycle track with multi-lane roundabouts that are separated from traffic, they actually decrease risk for cyclists. Thus, these papers recommend that environmental treatments and road developments can significantly affect cyclist safety.

There is additional research that shows that bicycle crashes are influenced in other ways by presence of bicycle facilities. These papers observed the impact of various

route types of bicycle lanes on bicycle crashes. Teschke et al. (2012) studied 14 route types and other route infrastructure features, evaluating them for injury risks. They found 5 types more safe than other types: “1) major streets without parked cars and with no bike infrastructure 2) major streets without parked cars and with bike lanes 3) local streets with no bike infrastructure 4) local streets designated as bike routes 5) cycle track”. They also found that three other infrastructure features were more dangerous: “1) downhill grades 2) streetcar or train tracks 3) construction.” Similarly, Hamann & Peek-Asa (2013) evaluated the influence of bicycle-specific roadway facilities (e.g., signage and bicycle lanes) in reducing bicycle crashes. This research showed that the existence of an on-road bike facility decreases the risk of a crash by as much as 60% on a bicycle lane or shared lane arrow and 38% on a bicycle-specific sign. The above-mentioned studies assess the impact of presence of on-road bicycle facilities on bicycle crashes. Still, on-road bicycle facilities are compared to off-road facilities (or streets without bicycle facility, not-on road bike facility). However, little research has been conducted to show the impacts of separated bicycle infrastructures (protected element) on bicycle crashes as compared to on-road bicycle facilities such as shared roadways.

2.3 Definition of bicycle facility types

This paper evaluates the impact of separated bicycle facilities versus shared roads on bicycle crashes. It is essential to clarify the definitions of these two types of facilities in order to truly understand the impact of different types of separated bicycle facilities, not just separated and shared road. As such, we need to clearly understand the definition of each bike facility and what distinct elements each uses. This research refers

to a case in Denver, Colorado. The City and County of Denver (2011) published Final Denver Moves (FDM) and this study cited key terms.

U.S. Department of Transportation (DOT.US) (2015) described that a separated bicycle lane is commonly defined as an on-road bike facility physically separated from motorized traffic with vertical elements. In this study, there are solid line elements that separated motorized and non-motorized users as well as vertical elements, and this is what is termed as separated bicycle lanes. Several facilities belong under this definition of separated bicycle lanes.

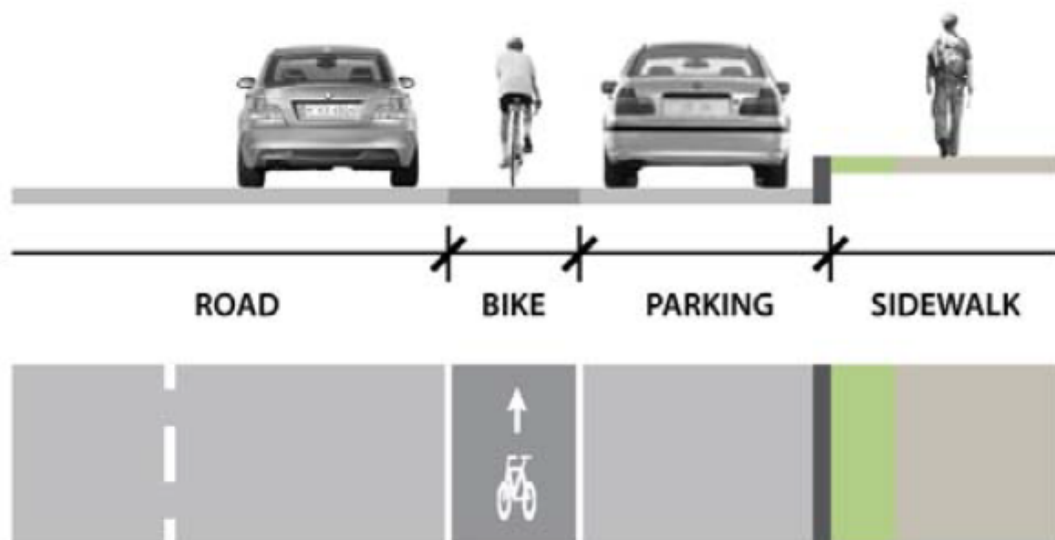
Table 2.1 Definition of separated bicycle lane by type (Final Denver Moves, 2011)

Type	Description
Bike lanes (Regular)	“Bicycle lanes are a portion of the roadway designated for preferential use by bicyclists. Bicycle lanes increase the riding comfort for bicyclists as they provide dedicated space from vehicular traffic and reduce stress caused by acceleration and operating speed differentials between bicyclists and motorists.” (FDM, 2011, p. 23)
Buffered Bike lanes	“Buffered bike lanes are created by painting a flush buffer zone between a bike lane and the adjacent travel lane.” (FDM, 2011, p. 22)
Cycle Track	“Cycle tracks provide an exclusive bikeway separated from motor vehicle and pedestrian traffic by a median, planter strip, and/or a parking lane.” (FDM, 2011, p. 20)

1) Bicycle lane (Bike lane)

Bicycle lanes are a portion of the roadway designated for preferential use by bicyclists. Final Denver Moves (FDM) (2011) describe that bike lanes are one-way facilities that usually in the same direction as the adjacent motor vehicle traffic on the right side of the road. Bicycle lanes increase riding comfort for cyclists as they provide dedicated vehicle traffic space and reduce stress due to acceleration and speed differentials between cyclists and motorists. It provides the minimum standard for separate on-street bicycle accommodation.

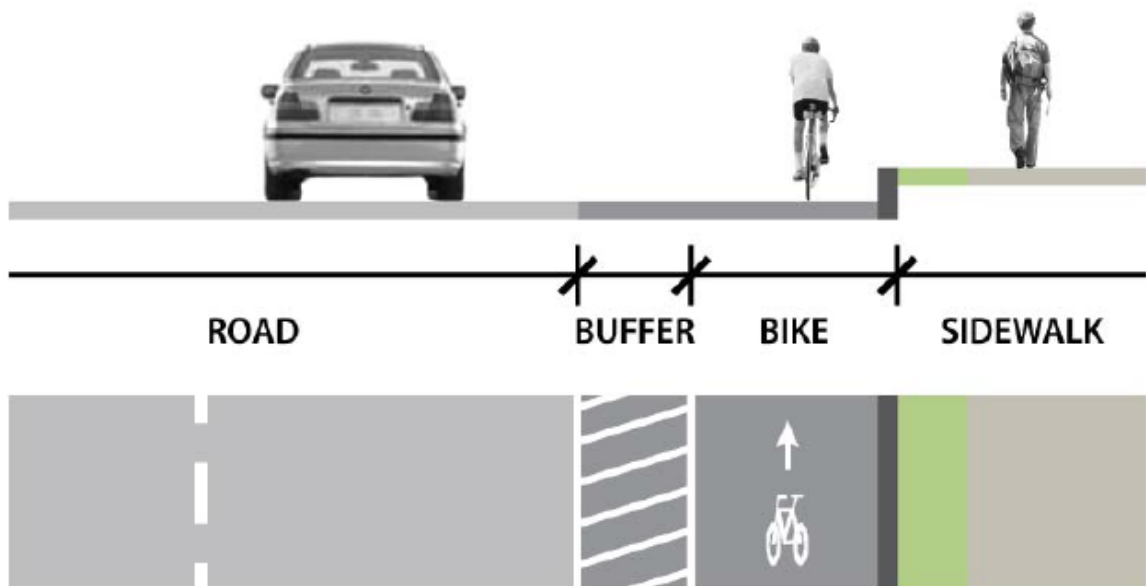
Figure 2.1 Bicycle lane design from FDM (Final Denver Moves, 2011)



2) Buffered Bicycle lanes

Buffered bike lanes are created by painting a contiguous buffer zone between a bike lane and the adjacent travel lane. It is also possible to provide buffers between bike lanes and parking lanes to demarcate the door zone to discourage bicyclists from riding next to parked vehicles immediately. FDM stated that buffered bike lanes increase riding safety for bicyclists as they improve traffic and parked vehicle separation. They implied that this form of facility can be accompanied by signs that warn drivers when they open their doors to "look for bikes." Buffered bicycle lanes should be considered on steep roads where there may be higher downhill bicycle speeds and more severe door crashes (Final Denver Moves, 2011).

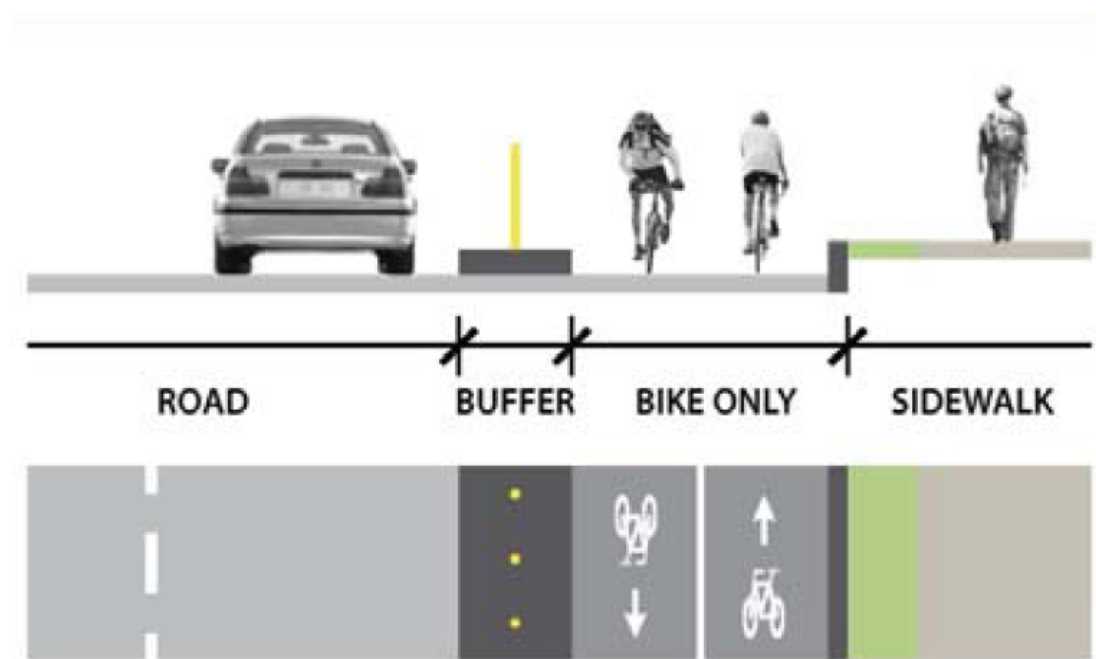
Figure 2.2 Buffered bicycle lane design from FDM (Final Denver Moves, 2011)



3) Cycle track

Cycle tracks provide an exclusive bikeway separated from motor vehicle and pedestrian traffic by a median, planter strip, and/or a parking lane (Final Denver Moves, 2011). This facility may be suggested to accentuate the distinction of the lane at street level, sidewalk level, or a height between the two. The cyclist's level of comfort in this facility will generally be high as the bicyclists will be isolated from neighboring motorists and pedestrians in their own space. However, FDM (2011) warns that the level of comfort could be significantly reduced if intersections were not built to minimize potential collisions between cars, pedestrians and bicyclists. For streets that lead to off-street paths, cycling tracks are important, since cyclists using trails also tend to be regularly separated from other traffic.

Figure 2.3 Cycle track design from FDM (Final Denver Moves, 2011)



Here are the facilities that belong to the shared roads.

Table 2.2 Definition of Shared bicycle lanes by type (Final Denver Moves, 2011)

Sharrow	“Shared lane markings or “sharrows” are designed to provide guidance in situations where space is too narrow for a motor vehicle and a bicycle to travel side by side.” (FDM, 2011, p. 27)
Shared roadway	“Cyclists operate with motor vehicles without any selected bicycle facility.” (FDM, 2011, p. 25)

1) Sharrow

FDM (2011) write that shared lane markings or “Sharrows” are designed to guide in situations where space is too narrow for a motor vehicle and a bicycle to travel side by side in separate lanes. Sharrows promote safe passing activities and reduce the incidence of bicycling in the wrong direction. The bicyclist's comfort level will usually be low as the bicyclists will operate on a shared lane with high volumes of traffic. FDM (2011) also described that relative comfort could vary considerably depending on the shared lane width, and that wide lanes are more comfortable than narrow lanes. Sharrows are often built where there is insufficient space to distribute to a dedicated bicycle facility in the through travel lane.

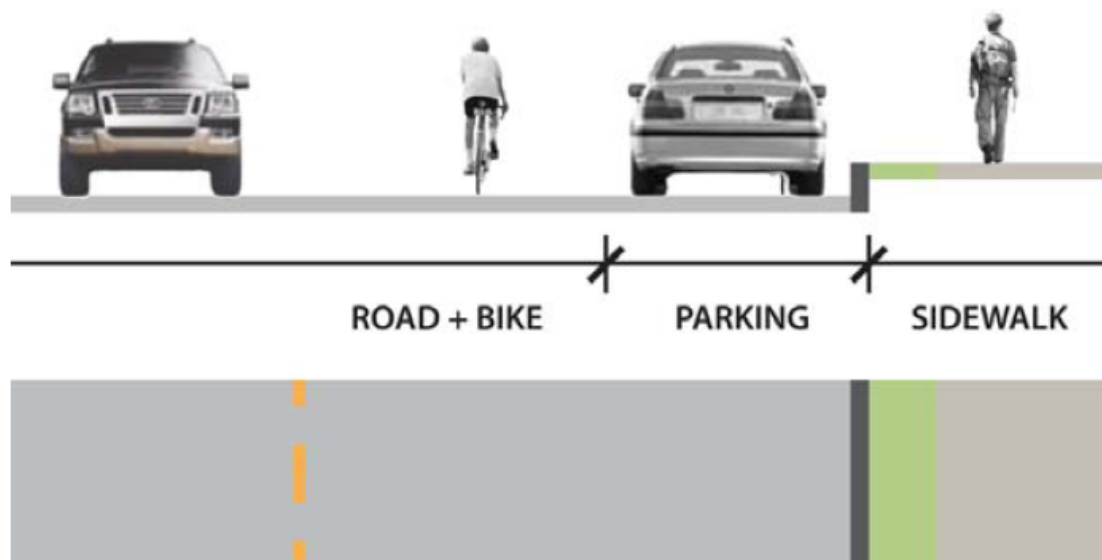
Figure 2.4 Sharrow design from FDM (Final Denver Moves, 2011)



2) Shared roadway

FDM (2011) identified the shared roads as roads where motor vehicles are operated by cyclists without any bicycle facilities. While bicyclists are considered automobiles and authorized on all roadways, shared streets are roads designated as part of the bike network. FDM described that while there are no bicycle-specific designs for shared lanes, different design features will make shared lanes more suitable for cycling. Relative comfort can vary significantly depending on the shared lane width, with more complete lanes than narrow lanes (FDM, 2011).

Figure 2.5 Shared roadway design from FDM (Final Denver Moves, 2011)



Chapter 3 Hypothesis

This study hypothesizes that separated bicycle facilities are actually more dangerous than the shared road.

Wachtel and Lewiston (1994) claimed that separation of bikes and cars leads to blind conflicts at intersections. It also encourages erroneous travel on both sidewalks and paths, including on both ends of the roadway, which further increases conflict. They also stated that the shared use of the roadway in the same direction of travel leads to fewer conflicts and fewer accidents.

Likewise, Forester (2001) claimed that separate facilities for cycling are risky. He pointed out that the popular argument is ultimately based on the assumption that a bike facility makes cycling much safer, especially for beginners who don't know how to follow road rules for vehicle drivers. However, Forester (2001) suggested that the argument from correlation ignores many other factors that might contribute to the accident rate. He implied that nobody has been able to determine either of the two critical theories. First, either safer cycling at the same speed or faster cycling at the same accident rate are results urban side path systems. (Forester, 2001). The second is that painting bicycle lane lines either decreases the accident rate for qualified cyclists or allows cyclists of lower skills to cycle at the same crash rate. Forester (2001) also insisted that motorized traffic in the same direction presents the greatest risk to cyclists. He also emphasized that bicycle facilities separate cyclists from same-direction motorized traffic. Bikeways do not separate cyclists from motor vehicles crossing or turning, and there is some risk from motor traffic in the opposite direction (Forester, 2001).

Similarly, John Franklin has disputed increases in the rate and severity of car-bicycle crashes because of such separation, based on an overview of studies published up to 1999. In the same way, Forsyth & Krizek (2010) suggested that the critical argument against safety claims for separated bicycle facilities is that actual crash data fails to support statements that separated bicycle facilities are safer. This is because most collision between motor vehicles and bicycles occur at intersections or when turning movements occur, not in the same direction (Forsyth & Krizek, 2010).

Heine (2013) raises doubts about cycle track safety. To comprehend bicycle safety, it is important to examine the actual rather than perceived dangers. She insisted that the hazard of being hit by a car coming too close from behind or being "clipped" by it is low. Plus, it reflects fewer than 5% of motor vehicle-bike crashes. Therefore, she implied that the majority of motorcycle and car accidents occur at intersections. Several studies agree with this argument. For example, Jensen (2008) contended that the construction of bicycle facilities leads to fewer and less severe crashes in rural areas, but to more crashes in urban areas, mainly due to higher intersection crash rates.

Furthermore, Jensen et al. (2007) also has proven that the built cycle tracks caused 9-10% more accidents and injuries on repaired highways. Installation of cycle tracks and lanes have had positive effects in terms of levels of traffic and safety. Cycle tracks have had negative effects on road safety (Jensen et al., 2007). Based on these arguments, this study assumed that a separated bicycle lane would lead to more crashes than any other on-road bicycle facility (such as a shared road). Therefore, this study examined the relationship between the separated bicycle lanes and bicycle crashes comparing the shared road with an empirical approach.

Chapter 4 Research Objective

This study generally aims to examine the impact of the separated bike facility on bicycle safety.

The first objective of this study is to discover the impact of shared bicycle roads and separated bicycle facilities on bicycle crashes. This paper hypothesizes that separated bicycle facilities are more dangerous than the shared road. Forsyth & Krizek (2010) wrote that improving safety is the primary reason for the proposed separated bicycle facility. However, Forsyth & Krizek (2010) also wrote that the argument that separated bicycle facilities improve the safety of cyclists is a controversial one in the field of transportation. This thesis shows how a separated bicycle lane, which is designed for the safety and comfort of the cyclist, actually increases the probability of bicycle accidents.

The second objective of this study is to determine which type, within separated bicycle facilities, is the safest. Each separated bicycle facility has a different separation method. Separation is achieved by a variety of means, including bollards, medians, elevated pavement with curbs and parked cars (Forsyth & Krizek, 2010). Likewise, there is a variety of types of protected (separated) bicycle lanes. Therefore, this study will determine which separation method is safest for cyclists.

Chapter 5 Methodology

5.1 Study area

This study focuses on the city of Denver in Colorado. There are two reasons for focusing on Denver as the study area. First, Denver is nationally recognized as a bike-friendly city. Bicycling Magazine ranks Denver as the 12th most bike-friendly city in the U.S. Denver has more than 100 miles of trails with multiple uses and 120 miles of bike lanes. Approximately, 10,000 residents of Denver ride their bikes to work daily. With its 88 stations, Denver B-Cycle is the city's leading bike-share alternative. Downtown Denver, in particular, has a significant amount of bicycle traffic. Roughly six to seven percent of downtown employees indicated that they commute on a bike (Worthington & Douglas 2017). The percentage of downtown Denver commuters who bike to work increased 25 percent in 2017 compared to the previous year (Sachs, Short, Greenfield, & Bosselman 2018).

Second, Denver is very interested and well developed in bicycle facilities planning. FDM (2011) stated that Denver Moves would add 270 miles of bicycle facility types to the existing 172 miles of multi-use and bicycle facilities. High or medium ease bicycle facilities are a significant part (80%) of the final Denver Moves network plan (Final Denver Moves, 2011). Hernandez (2019) cited that the city will be installing 16.9 new bikeway miles along nine city streets this year, according to the Public Works Department. Their target is to get everyone in Denver within a quarter mile of a “high comfort bike facility,” which is defined as a protected bike lane with some vertical elements separating cyclists from vehicle traffic and neighborhood bikeways with streets

designed to encourage bike travel (Hernandez, 2019). Figure 5.1 shows the existing bicycle facilities in Denver.

Figure 5.1 Existing bicycle facilities in Denver map (2019)
(Data source: the Denver open data portal)

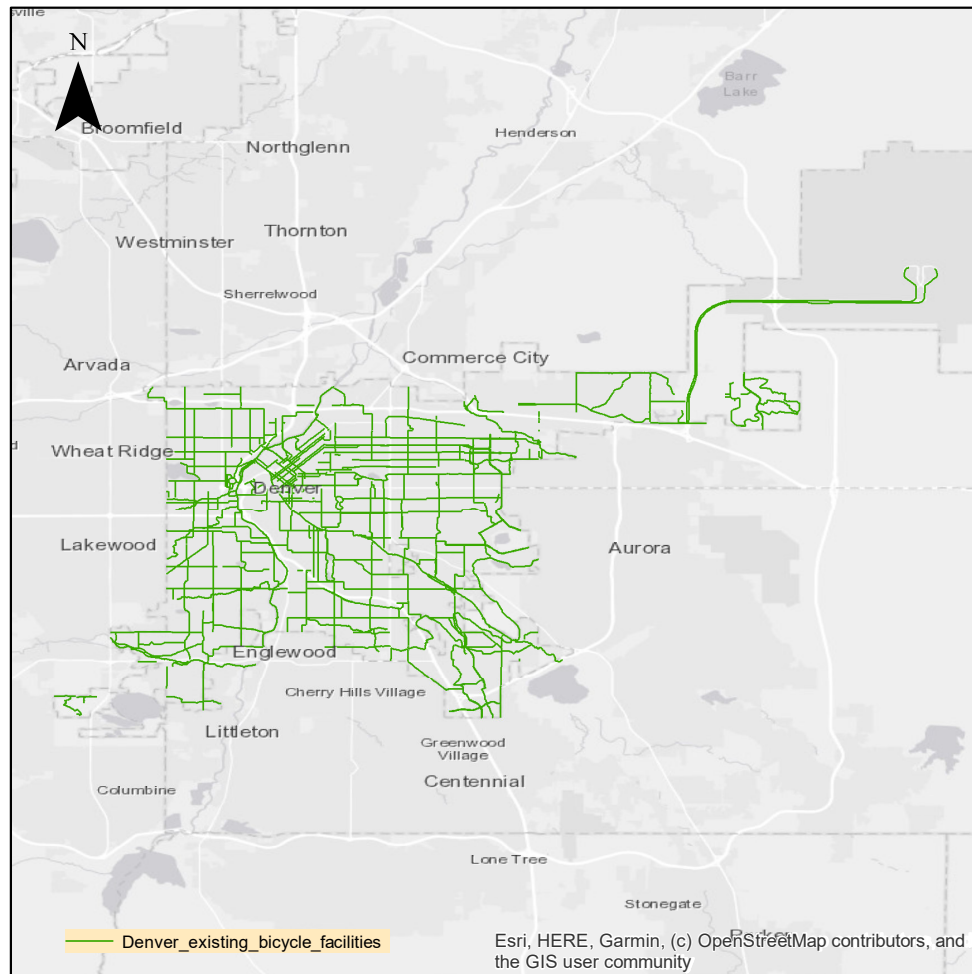
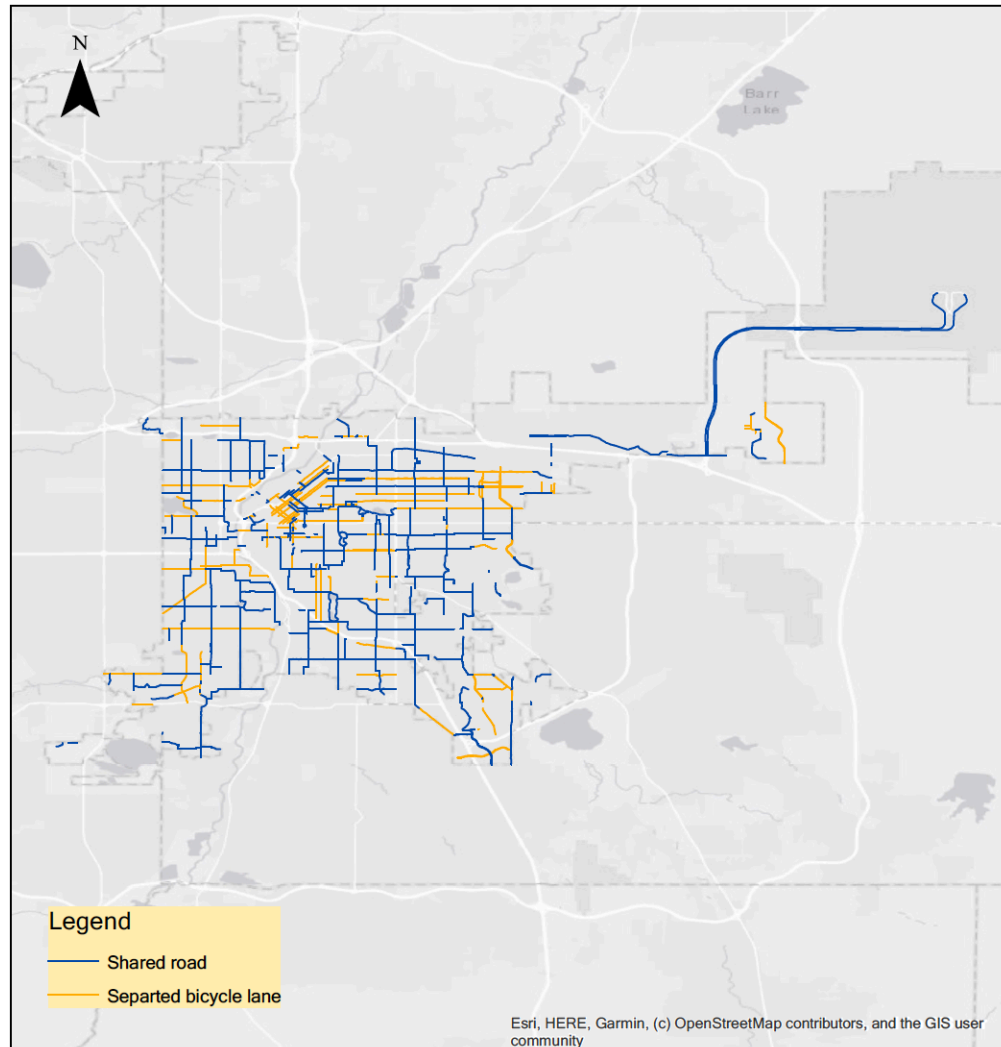


Figure 5.2 indicates the distribution of separated bicycle lanes and shared roads. The blue line is a shared road, and the yellow line illustrates a separated bicycle lane.

Figure 5.2 Existing separated bicycle lanes and shared road in Denver (2019)

(Data source: the Denver open data portal)



5.2 Data & Unit Analysis

Data was derived from the Denver open data portal

(<https://www.denvergov.org/opendata>), which includes traffic accidents and bicycle facility datasets. First, this study created bicycle crash data by extracting only bicycle-

involved crashes from the traffic accident dataset and used information on bicycle crashes, fatalities, and severe injuries. This dataset was organized into a shapefile for Arc GIS and displayed point features. Using this information, this study created bicycle crash data, identifying incidents of collision between motorized vehicles and bicycles.

Second, the Denver bicycle facility dataset contains the existing and proposed bicycle facilities in the city and county of Denver. This data presents the facility type and address of each bike facility. It categorized existing facility types as Bike Lane, Buffered Bike Lane, Climbing Lane, Cycle Track, Bus/Bike Lane, Paved shoulder, Bike Boulevard, Minor Trail, Neighborhood Trail, Gateway Trail, Shared Parking Bike Lane, Regional Trail, Sharrow, Shared Roadway, Off-Street Connector and Sidewalk/Bikes Permitted (aka bikes permitted on sidewalk). This thesis divided these facilities as on and off-street bicycle facilities and only deals with only on-road facilities. The next step is that this study defined and categorized each on road bicycle facility as separated or shared road facilities. Table 5.1 shows the classification of shared road and separated bicycle facilities.

Table 5.1 Categorized Separated bicycle lane and Shared road

Shared and Separated bicycle lane	Bicycle lane type
Shared road	Sharrow
	Shared road
Separated bicycle lane	Bike lanes (Regular)
	Buffered Bike lanes
	Cycle Track

In addition, Denver bicycle data offered a shapefile for GIS and displayed line features. Bicycle facility data identifies the street segment as minimum unit. Street segment in this study is the minimum unit for bicycle facility. Figure 5.3 shows what is the street segment, with the orange line representing the street segment.

Figure 5.3 Example of street segment of bicycle facilities in Denver (2019)

(Data source: the Denver open data portal)



This paper uses the GIS (Spatial join) tool. Spatial join is that joins attributes from one feature to another based on the spatial relationship. A spatial join involves matching rows from the join layer to the target layer based on a spatial relationship and writing to an

output feature class. In this case, table 5.2 shows that the target feature is a bicycle facility segment, and the join feature is a bicycle crash. Likewise, the bicycle crash point feature joins to each bicycle facility segment spatially. Each segment has the number of incidents that have occurred precisely position. Therefore, this study generated a bicycle crash on the bike facility dataset.

Table 5.2 Spatial join attribute and spatial relationship of this analysis

Target feature	Join feature	The spatial relationship : Intersect
Line (Bicycle facility segment)	Point (Bicycle crash)	A join crash point is matched to a target bicycle facility line that contains it.

Figure 5.4 Bicycle crashes and bicycle facilities in Denver (2013-2019)

(Data source: the Denver open data portal)

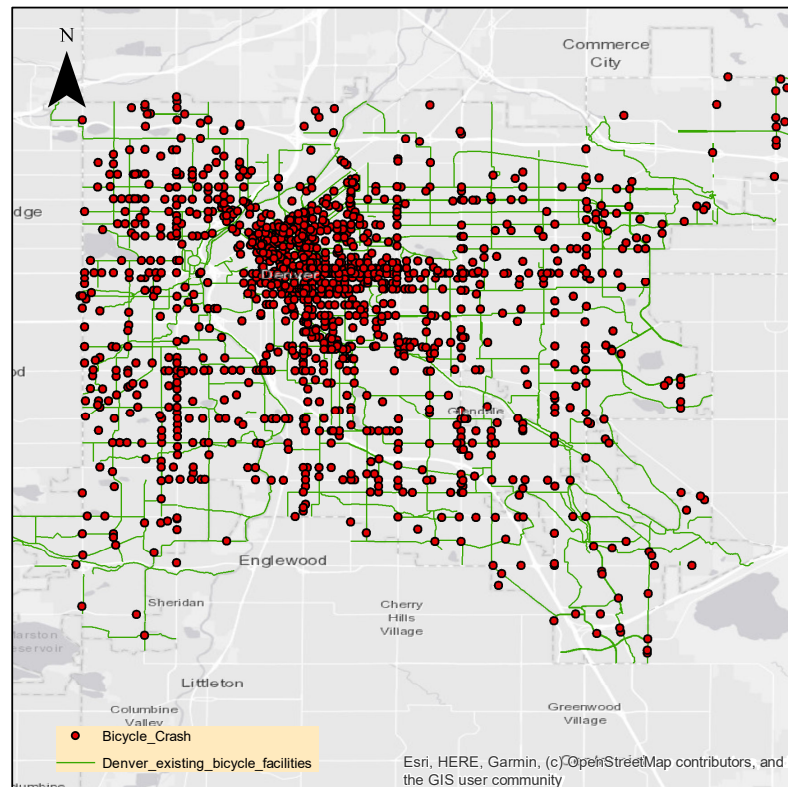
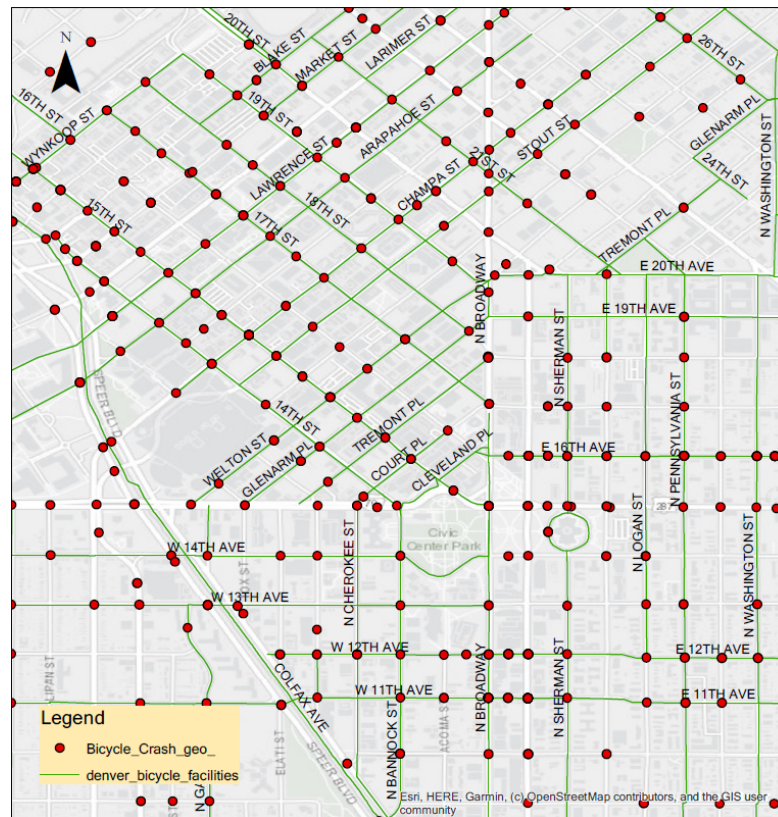


Figure 5.5 Locations of bicycle crashes in Downtown Denver (2019)

(Data source: the Denver open data portal)



5.3 Analytical method

Because the data are count data, a Poisson distribution was assumed. There have been several papers on predicting traffic accident counts and how other variables affect traffic crash counts. Then they used Poisson rate regression as an analytical tool (Ma, Kockelman, & Damien, 2008; Miaou, 1994; Li, Wang, Liu, Bigham, & Ragland, 2013). In the bicycle safety studies, they also used Poisson rate regression (Hels & Orozova-Bekkevold, 2007; Oh et al. 2008). This paper investigates the impact of separated bicycle lanes and shared road on bicycle safety and which among the separation elements are safer.

The model would be written as

Let c_{ij} denote the proportion of crashes for the j^{th} segment and i^{th} bike lane, $i = 1$ (*separated*), 2 (*shared_road*) . Then

$$c_{ij} \sim \text{Poisson}(\mu_{ij})$$

with $\log\left(\frac{c_{ij}}{s}\right) = \eta + \tau_i$

where

η = overall mean on the model scale

τ_i = effect of the i^{th} bike_lane type (separated or shared roadway)

s = offset due to the segment length (in miles)

(Source: Report from Statistical Cross-disciplinary Collaboration and Consulting Lab (SC3L), 2019)

Because a longer segment length will likely have more crashes than a shorter segment length, the segment length in miles was used to adjust for these differences

(*crash count / segment length*). Data were analyzed using the GLIMMIX procedure in SAS. The GLIMMIX procedure converts the data through a link function from the data scale to the model scale for the statistical analysis. Once the analysis is completed, an inverse link (ilink) is performed in order to put the predicted values back to the data scale (predicted means and percentage changes).

Table 5.3 is an example of part of dataset. Table 5.3 includes the type of bicycle facility, the crash count and segment length that occurred at the site of the bicycle facility and indicates whether the site is a separate bicycle lane or shared road (Lane_type). This study will illustrate the definition of these variables in table 5.3. ID indicated the identity

(number) of each segment. Crash_Count is a crash count on the bicycle facility segment. Facility indicated the type of bicycle facility segment; there are SRd (Shared road), SH (Sharrows), BL (Bike lane), BufBL (Buffered bike lane), CT (Cycle track). Lane_Type indicated whether each bicycle facility segment belongs to a shared roadway or a separated bicycle lane. Segment_length_(Miles) indicated each bicycle facility segment length (Units is Miles).

Table 5.3 Example of part of the dataset

ID	Crash_Count	Facility	Lane_Type	Segment_Length (Miles)
1	2	SRd	Shared	0.12339728
2	1	SRd	Shared	0.03201017
3	0	SRd	Shared	0.0872396
4	1	SRd	Shared	0.08627019
5	0	SRd	Shared	0.08705386
6	1	SRd	Shared	0.06515223
7	0	SRd	Shared	0.12793783
8	0	SRd	Shared	0.06319549
9	0	SRd	Shared	0.0606304
10	1	SRd	Shared	0.06434666

5.4 Descriptive Statistics

This section presents the descriptive statistics of collected data. This study utilizes bicycle crash data and bicycle facility data from Denver open data (<https://www.denvergov.org/opendata>). Using this information, this thesis created crash data on each bicycle facility segment. Figure 5.6 indicates crash count on bicycle facilities. Total number of crashes is 2,220. Crash count on bicycle facility is 897.

Figure 5.6 Crash count on bicycle facilities in the city of Denver from 2013 to 2019

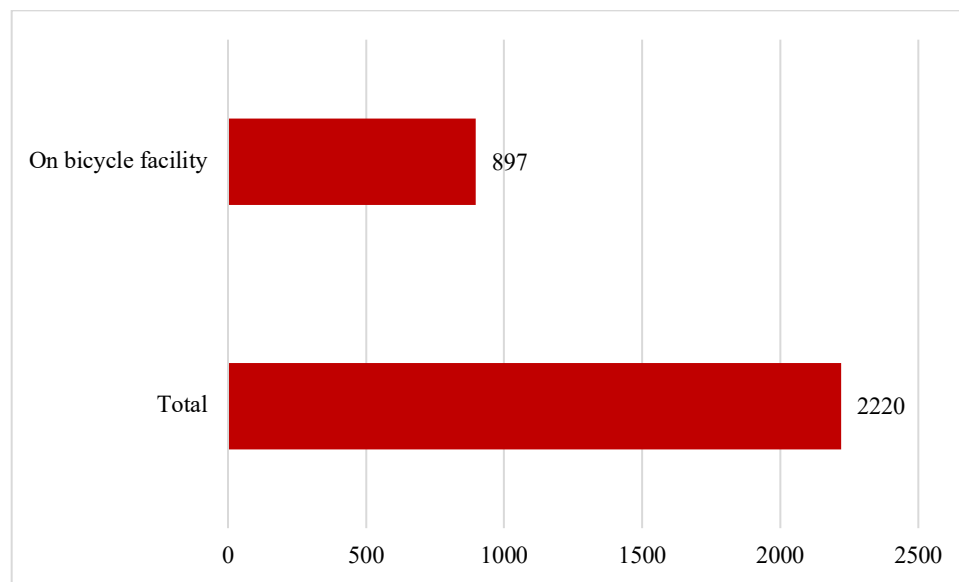


Figure 5.7 shows the crash count for each bicycle facility used in the analysis. In terms of number of crashes, there are 324 crash counts on bike lanes. Bike lanes had the highest number of crashes among all bicycle facilities. Next, there are 226 crashes on shared roadways, where the second highest crash numbers occurred. Buffered bike lanes had the least number of crash occurrences with 49 bicycle crashes. Accidents occurring in cycle tracks and roads with sharrows, were 91 and 119, respectively.

Figure 5.7 Crash Count on bicycle facility by type in city of Denver from 2013 to 2019

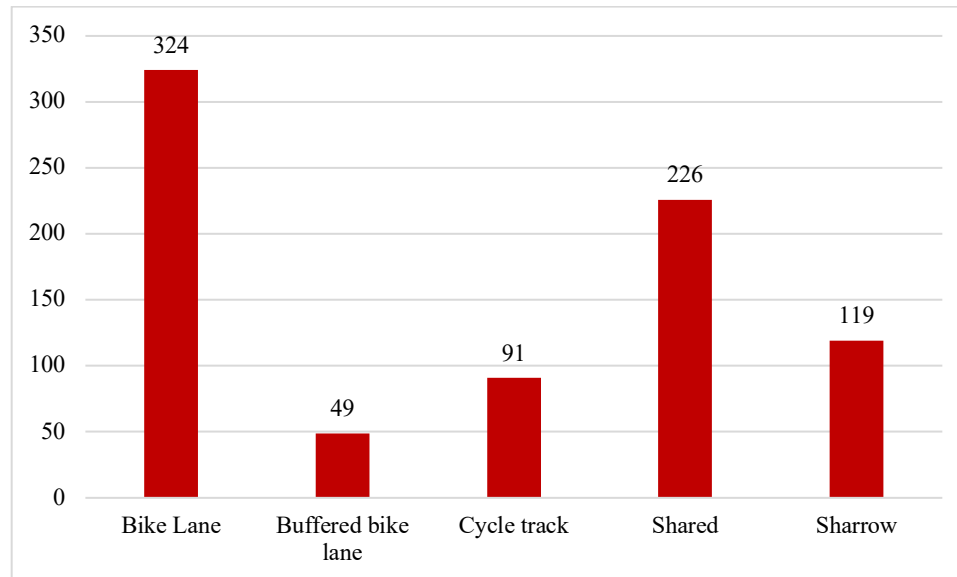
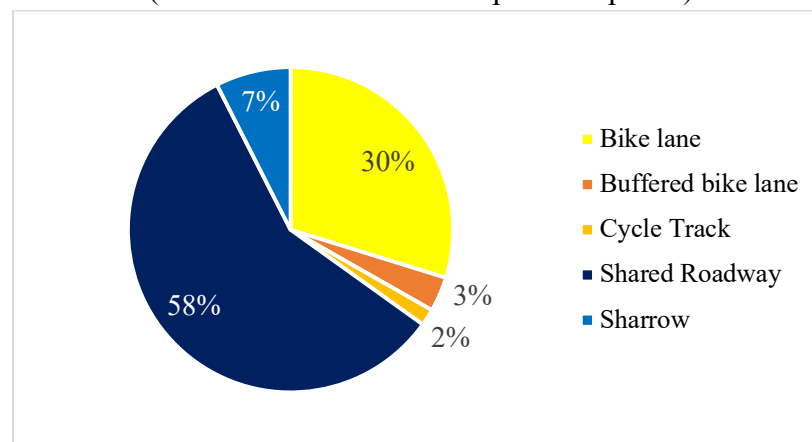


Figure 5.8 indicates the percentage of each bicycle facility site located in Denver.

This study dealt with five bicycle facility types: bike lane, buffered bike lane, cycle track, shared roadway, and sharrow. The total number of all bicycle facilities is 3,771. The largest number of bicycle facilities included in this study are shared roadways. It is 58% of the total. Next, bike lanes are 30% of total. Buffered bike lanes and cycle tracks accounted for 3% and 2%, respectively.

Figure 5.8 Percentage of each existing bicycle facility type in city of Denver in 2019

(Data source: the Denver open data portal)



This paper classified bicycle facilities into two categories: separated bicycle lanes and shared roadways. Separated bicycle lanes include bike lanes, buffered bike lane and cycle tracks. Shared roadways include shared roadways and sharrows. Figure 5.9 below depicts crash counts on separated bicycle lanes and shared roadways. There were 444 accidents on separated bicycle lanes, which was 65 more than on the shared roadways.

Figure 5.9 Crash counts on separated bicycle lanes and shared roads in city of Denver from 2013 to 2019

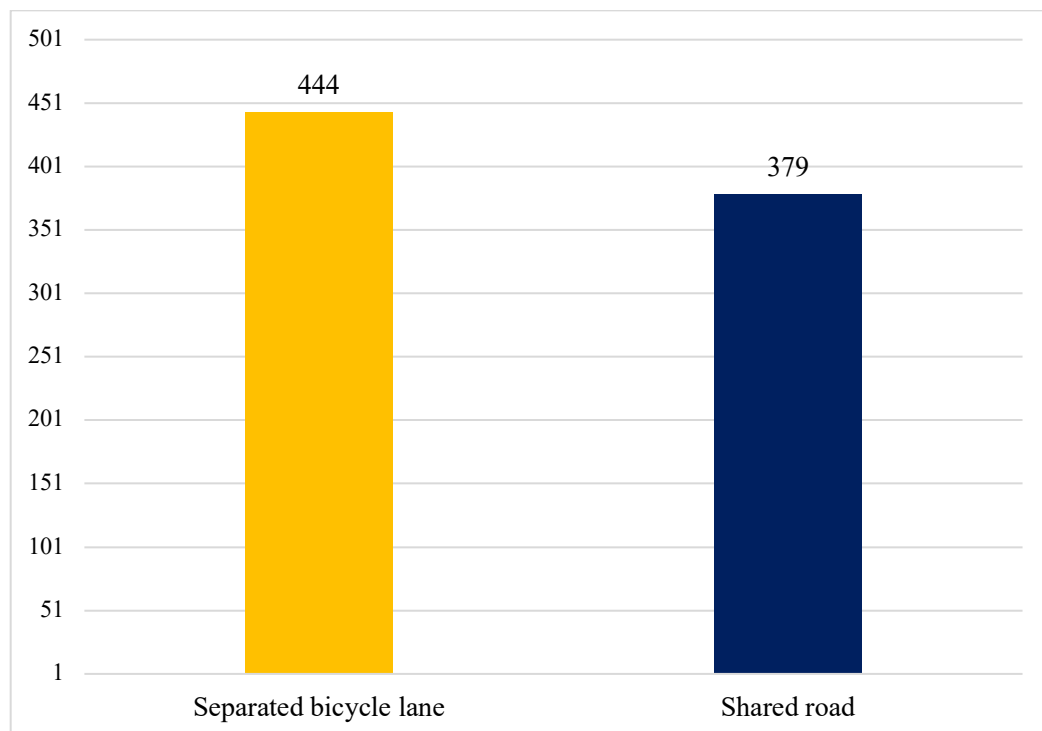
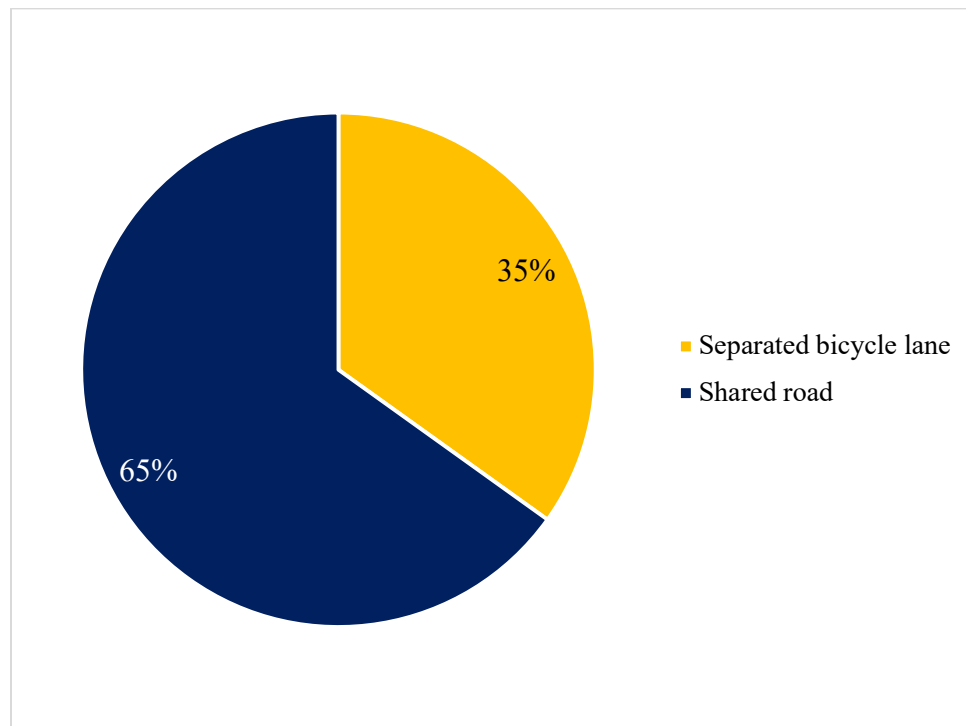


Figure 5.10 shows the percentage distribution between separated bicycle lanes and shared roads. There are 1,316 separated bicycle lanes, accounting for 35% of the total and 2455 shared roads, accounting for 65% of the total. There are about twice as many

shared roads as separated bicycle lanes.

Figure 5.10 Percent of separated bicycle lanes and shared roads in city of Denver from 2013 to 2019



Chapter 6 Results

This study deduces p-value is less than 0.05 is statistically significant. Likewise, there is a strong significant of that variable. Plus, the p-values could be showed as $\text{Pr} > |t|$.

6.1 Comparing the impact of shared bicycle lanes and separated bicycle lanes on bicycle crashes

The first research objective was to determine the impact of shared bicycle lanes and separated bicycle lanes on bicycle crashes. There were a total of 2,083 bicycle lanes used in this analysis. A Poisson rate regression model (page. 23) was run in SAS 9.4 to compare separated bicycle lanes and shared roads. Overall, there was a significant effect of lane type. Table 6.1 shows parameter estimates. They indicated that the groups are different or same. Large t-value tells you that the groups are different. Table 6.1 also indicated that two variables are different on this analysis. Plus, there is a statistically significant (t value is 15.9, DF = 3769, p value < 0.0001**).

The estimated model: $\log(\bar{c}/s) = -1.22 + 0.77 \times \text{LaneType}$

where

Lane_Type $\begin{cases} 1: \text{if separated bicycle lane} \\ 0: \text{if shared road} \end{cases}$

Table 6.1 Parameter estimates (Separated & Shared)

Effect	Lane_Type	Estimate	Standard Error	DF	t Value	Pr > t
Intercept		-1.2190	0.03553	3769	-34.31	<.0001
Lane_Type	Separated	0.7727	0.04860	3769	15.90	<.0001
Lane_Type	Shared	0	.	.	.	.

Table 6.2 shows the least square means. The above mentioned that the response of this study is non-normal data. Therefore, this study used the model scale with the natural log function ($\eta_{ij} = \log \left(\frac{c_{ij}}{s} \right)$) and converted to data scale. For this reason, least square means we calculated on the model scale using the estimated equation above on the model scale and back transformed using $\frac{c}{s} = e^n$.

This study interprets a mean that is calculated at a bicycle segment length of 1 mile. Each bicycle facility had different segment lengths. Table 6.2 shows that the estimated average number of crashes in a separated bicycle lane is 0.64 (Standard error mean = 0.021) for 1 mile. The estimated average number of crashes in a shared is 0.3 (Standard error mean = 0.0105) crashes for 1 mile. This study inferred that there are more crashes in a separated bicycle lane than on a shared road.

Table 6.2 Lane_Type Least Squares Means (Separated & Shared)

Lane_Type	Mean	Standard Error Mean	95% Confidence Interval of the Difference	
			Lower Mean	Upper Mean
Separated	0.6400	0.02122	0.5997	0.6830
Shared	0.2955	0.01050	0.2756	0.3168

Figure 6.1 visualizes table 6.2.

Figure 6.1 Plot of LSMEANS (Separated & Shared)

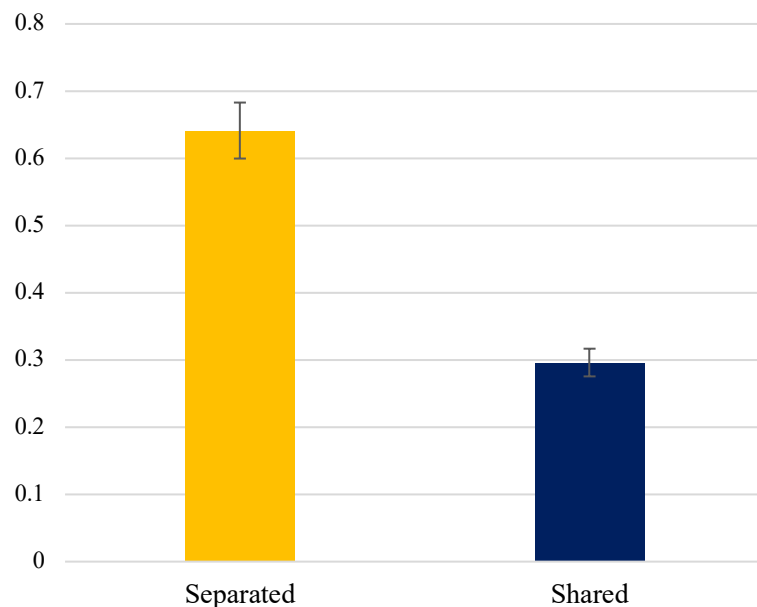


Table 6.3 shows the percentage change in the information discussed above. This study also interprets the percentage change. This study had mean of number of crashes for separated bicycle lane and shared but their value is decimal point instead of integer. Hence, to make the comparison readily, this study developed percentage change information. This study interprets percentage change as the way that “A” is estimated to increase the average number of responses by $100 * (\text{Exponentiated estimate} - 1) \%$ compared to “B” (Source: Report from SC3L, 2019). In this case, “A” is separated bicycle lanes and “B” is shared roadways. Then the number of responses reflect the crash count in this study. Table 6.3 identifies that a separated bike lane is estimated to increase the average number of crashes by 117% compared to a shared road.

Table 6.3 The percentage change information (Separated & Shared)

Label	t Value	Pr > t	Percentage Change	Exponentiated Estimate
Separated vs Shared	15.90	<.0001	117%	2.1657

6.2 Comparing between each separated bicycle lane

The second research objective was comparing the impact of each type of separated bicycle lane (e.g. bicycle lane, buffered bike lane, cycle track) on bicycle crashes. Bicycle lanes, buffered bike lanes, and cycle tracks each have different separated or protected elements. The separating element of a bicycle lane is a white solid line. Buffered bike lanes are formed by painting a flush buffer zone. The separating elements of a cycle track are a median, planter strip, or a parking lane. A cycle track has physically protected elements. In this analysis, this study uses the same analysis method used above. This study compared percentage change each separated bicycle facility; 1) Cycle Track (CT) VS Bike Lane (BL), 2) Cycle track VS Buffered Bike Lane (BBL), and 3) Buffered bike lane VS Bike lane. There are 1,316 segments of separated bicycle lanes. Thus, this analysis used 1,316 separated bicycle lane segments. Overall, there was a significant effect of facility (F value = 181.06, num df = 2, den df = 1313, p – value < 0.0001*).

The estimated model: $\log(\bar{c}/s) = 0.9669 - 1.6115BL - 1.3587BufBL$

where

$BL \begin{cases} 1 : \text{if facility} = \text{Bicycle lane} \\ 0: \text{Otherwise} \end{cases}$

$BufBL \begin{cases} 1: \text{if facility} = \text{Buffered bike lane} \\ 0: \text{Otherwise} \end{cases}$

Table 6.4 Parameter estimates (BL, BBL, CT)

Effect	Facility	Estimate	Standard Error	DF	t Value	Pr > t
Intercept		0.9669	0.07495	1313	12.90	<.0001
Facility	BL	-1.6115	0.08478	1313	-19.01	<.0001
Facility	BufBL	-1.3587	0.1271	1313	-10.69	<.0001
Facility	CT	0	.	.	.	.

There are three different categories, this study defined two dummy variables. In this case, they are bike lane and buffered bike lane. Pairwise t-tests with DF = 1313 were used to compare facilities within separated bike lanes. Table 6.5 shows that the p-value of cycle tract vs bike lane and cycle tract vs buffered bike lane is less than 0.0001. Then, p-value of buffered bike lane vs bike lane is 0.0217, this value is less than 0.05. This study conclude that this is statistically significant. The above-mentioned that large t-score deduce the groups are different. Table 6.5 also indicated that cycle tract and bike lane are most different groups than other groups.

Table 6.5 T value and Pr >|t| of analysis (BL, BBL, CT)

Label	t Value	Pr > t
Cycle Tract vs Bike Lane	19.01	<.0001
Cycle Tract vs Buffered Bike Lane	10.69	<.0001
Buffered Bike Lane vs Bike Lane	2.30	0.0217

Table 6.6 indicated the least square means for bike lane, buffered bike lane and cycle tract. This study evaluates that the estimated mean of crash count for each separated bicycle lane for 1 mile. Table 6.6 displays that the estimated average number of crashes in a bike lane is 0.52. Next, the estimated average number of crashes in a buffered bike lane is 0.68. It is slightly higher than the bike lane. Lastly, the estimated average number

of crashes in a cycle track is 2.63. It is noticeably higher than the other two separated bicycle facilities. In other words, it is much more likely for there to be a crash in the cycle track than the other two facilities.

Table 6.6 Facility LSMEANS table (BL, BBL, CT)

Facility	Mean	Standard Error Mean	95% Confidence Interval of the Difference	
			Lower Mean	Upper Mean
BL	0.5249	0.02080	0.4856	0.5673
BufBL	0.6758	0.06934	0.5526	0.8265
CT	2.6297	0.1971	2.2701	3.0462

The plot (Figure 6.2) is a visual depiction of the LSMEANS table above.

Figure 6.2 Plot of LSMEANS (BL, BBL, CT)

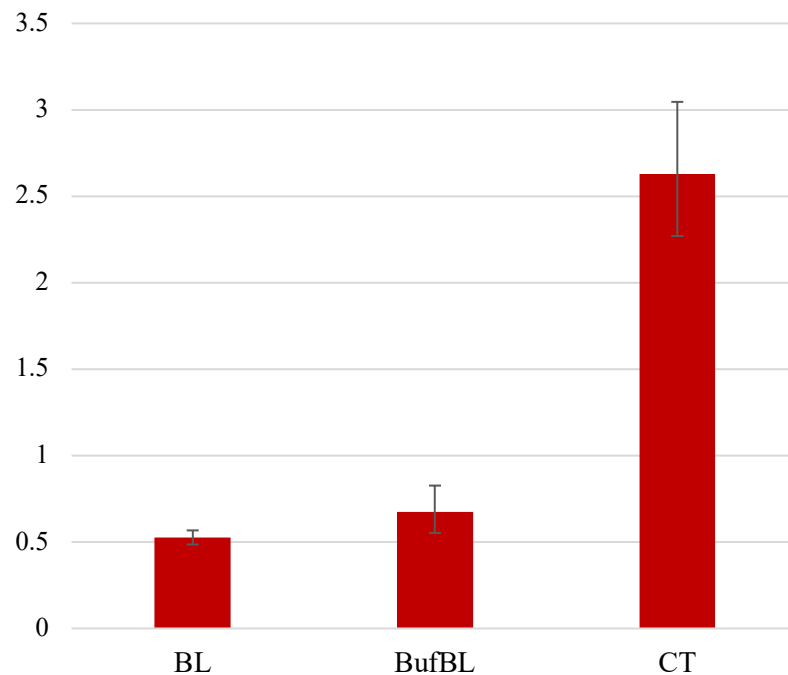


Table 6.7 shows the percentage change information discussed above. A cycle track facility is estimated to increase the average number of crashes by 401% compared to bike lane facility. Then, with 95% confidence, a cycle track facility increases the true average number of crashes by anywhere between 324% to 492% compared to a bike lane facility. Next is a cycle track versus buffered bike lane. A cycle track facility is estimated to increase the average number of responses by 289% compared to buffered bike lane facility. The third one is buffered bike lane versus bike lane. A buffered bike lane is estimated to increase the average number of responses by 29% compared to bike lane facility. Overwhelming, the data shows that crashes occur more often in the, the cycle track compared to the other facilities. It can also be seen that the more physical the protected method is, the more accidents seem to occur.

Table 6.7 The percentage change information (BL, BBL, CT)

Label	Percentage Change (Exponentiated Estimate)	Exponentiated Estimate	95% Confidence Interval of the Difference			
			Percentage Change (Exponentiated Lower)	Exponentiated Lower	Percentage Change (Exponentiated Upper)	Exponentiated Upper
Cycle Tract vs Bike Lane	401%	5.0102	324%	4.2425	492%	5.9168
Cycle Tract vs Buffered Bike Lane	289%	3.8910	203%	3.0326	399%	4.9925
Buffered Bike Lane vs Bike Lane	29%	1.2876	4%	1.0377	60%	1.5977

Chapter 7 Discussion

This study used a Poisson Rate Regression analysis method, incorporating crash data with current bicycle facilities, to observe the impact of separated bicycle facilities in Denver, Colorado. The first objective of this study aimed to find the impact of shared bicycle roads and separated bicycle facilities on bicycle crashes. The second goal of this study was to identify which of the various types of separate bike facilities is safest. The findings of this study suggested that a separated bike lane is estimated to increase the average number of crashes by 117% compared to shared road. This study also found that cycle track facilities are estimated to have increased the average number of collisions by 401% compared to the bicycle lane. Compared to the buffer bike lane facility, the cycle track facility is estimated to have increased the average number of collisions by 289%. Plus, a buffered bike lane leads to an estimated 29% increase in the mean number of crashes when compared to a bike lane. This result shows that there are more bicycle crashes in the separated bike lane than in shared roads. Among separated bicycle facilities, the cycle track, where physically separated facilities were installed, was most likely to cause bicycle crashes.

The findings of this study are statistically significant; all consequences were in the hypothesized direction of this thesis. Previous research indicated that the ultimate goal of the separate bicycle facility (SBF) is to separate the motor vehicles, bicycles, and pedestrians. There are two main reasons why SBFs are typically proposed: improving safety and increasing bicycle use (Forsyth & Krizek, 2010). In addition, this facility can be seen to increase bicycle volume and speed. However, Forsyth & Krizek (2010) indicated that the findings on separated bicycle facilities are mixed; empirically, they are

not safer, in part because intersections are one of the most problematic locations for cyclists, and they make intersections more complex.

Through the investigation of the actual case in Denver, actual data supports this statement. Figure 7.1 describes the specific location of the crash with intersections, alleys, driveways, highway interchanges, and parking lots in Denver from 2013 to 2019. This graph shows that the number of crashes at the intersection is 1,350. The number of crashes at the intersection and number of crashes intersection related is 1,520. The total crash count is 2,221. Hence, intersection accidents (including the intersection related) are well over half of the total number of accidents.

Figure 7.1 The specific location of the bicycle crashes in Denver from 2013 to 2019

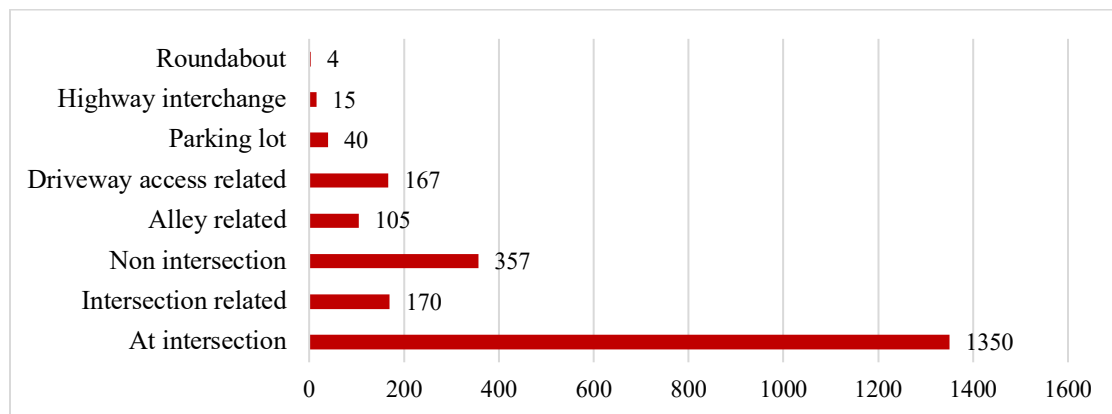


Table 7.1 shows the analysis of the bicycle crash at the intersection. The intersection crash count of separated bicycle facilities is 332, and it is bigger than the shared roads. However, separated bicycle facilities and shared roads have a different number of intersections. To normalize the data, this study divided intersection crash count and

number of intersections. The value of separated bicycle facilities is twice as large as the value of the shared road.

Table 7.1 Bicycle crash at intersection analysis

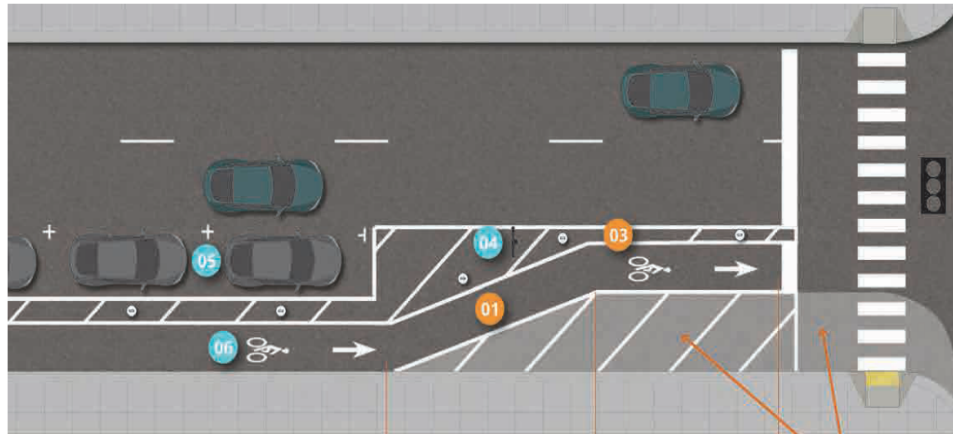
	Separated bicycle facility	Shared road
Total crash count	444	379
Intersection crash count	332	285
Number of Intersection	1197	2173
Intersection crash count / Number of Intersection	0.277	0.131

This study suggests the solution for improving the safety of the separated bicycle facility. Previous research recommended improving the separated bicycle lane at intersection design. Because, riding on a separate bicycle lane will allow the cyclist to feel safe and conscious of it, but at the same time, be aware that it is dangerous at intersections and that more accidents may occur than on shared roads. The following section presents several potential recommendations to improve the design of intersection of separated bicycle facilities. U.S. Department of Transportation (DOT.US) (2015) published a separated bike lane planning and design guide and they recommend several separated bicycle facility intersection designs.

First is bend-in and bend-out design. The developer may choose to either "bend-in" or "bend-out" the separate bicycle facility at the intersection to reduce the likelihood of conflict with right-turning vehicles when the separate bicycle facility reaches an intersection with right-turning vehicles already positioned to the left of the separate bike lane (DOT.US, 2015). Figure 7.2 shows an example of bend-in intersection design. The dark grey car is a parked car, and the dark green car is a driving car. This design allows

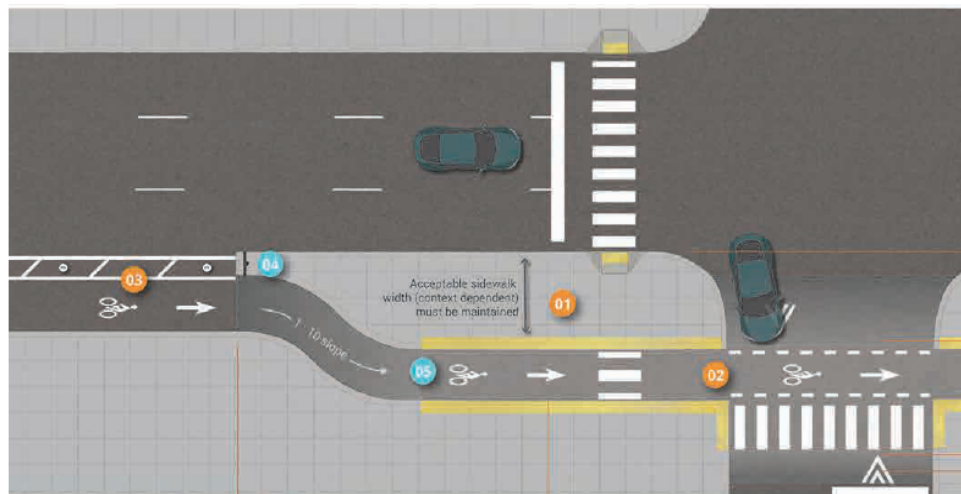
motorists on a side street to see bicycles and vehicles in a similar field of vision (DOT.US, 2015).

Figure 7.2 Depiction of bend-in design (Source: DOT.US)



Another good option, the bend-out model, takes downstream bicyclists off the intersection on the side street, allowing vehicles to complete turning motions before engaging with bicyclists. Figure 7.3 shows a depiction of bend-out design.

Figure 7.3 Depiction of bend-out design (Source: DOT.US)



Another design recommendation is intersection markings. There are two types of intersection markings; 1) line markings and, 2) Green colored pavement. Figure 7.4

shows an example of line intersection markings. DOT.US (2015) suggested that white dashed lines can be used through intersections or other areas of traffic conflict to mark extensions of the separate bike facility. These dotted lines are proposed to increase visual awareness of the location of bicyclists (DOT.US, 2015). Figure 7.5 displays an example of green colored pavement marking.

Figure 7.4 Example of lines marking in Seattle (Source: Steve Ringman / The Seattle Time)



Figure 7.5 Example of green colored pavement marking in Vancouver, Canada.

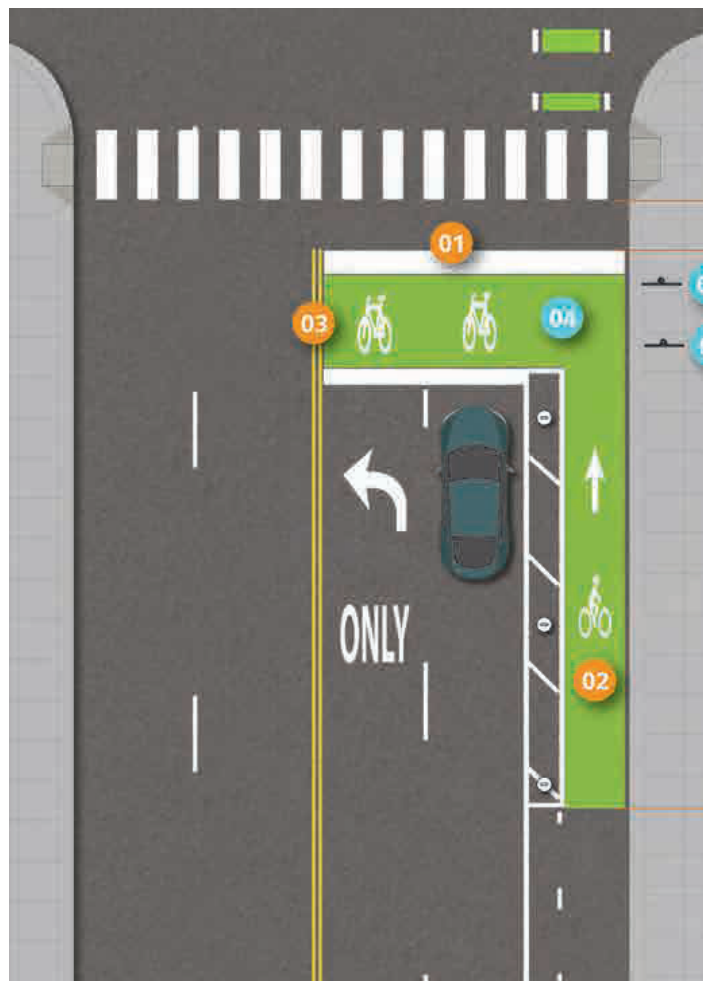
(Source: Madi Carlson)



The next design recommendation is bicycle turning movements. DOT.US (2015) indicated that to allow bicyclists to comfortably navigate intersections, where these

movements are allowed, intersection design must account for right-turning and left-turning movements. There are two types of movements of the bicycle; 1) Bike boxes and early exit, and 2) 2- Stage turn queue boxes. Bike boxes (Figure 7.6) are allocated spaces at signalized intersections that allow bicyclists to wait at red lights in line before motor vehicles. It allows cyclists to start and reach the intersection in front of motor vehicles when the signal is green (DOT.US, 2015).

Figure 7.6 Depiction of Bike boxes design (Source: DOT.US)



Next is the 2- Stage Turn Queue Boxes (Figure 7.7). This requires cyclists to turn left from a separate bike facility on the right or turn right from a separate bike facility on the

left. (DOT.US, 2015). Bicyclists who reach the intersection on a green light pull out into the two-stage queue box away from moving bikes and cross-street traffic.

Figure 7.7 Depiction of 2- Stage Turn Queue Boxes design (Source: DOT.US)



This study recognizes that there are other influential and determinant factors in bicycle crashes besides the type of bicycle facilities. Several studies agree that lighting conditions and higher speed limits have a significant effect on bicycle crash severity (Bahrololoom et al, 2016, Chen and Shen, 2016). Also, heavier traffic contributes significantly to bicycle crashes (Romanow, et al. 2012). Moreover, retail establishments and path obstructions are influential factors in bicycle crashes as well (Romanow, et al. 2012). The

presence of a retail establishment increased the likelihood of severe injury. In addition, good road conditions also have a positive effect on serious injuries (Romanow, et al, 2012). Another influential factor in bicycle crash is road signals. Areas with more road signals and street parking signs are more likely to have bicycle crashes (Chen, 2015)

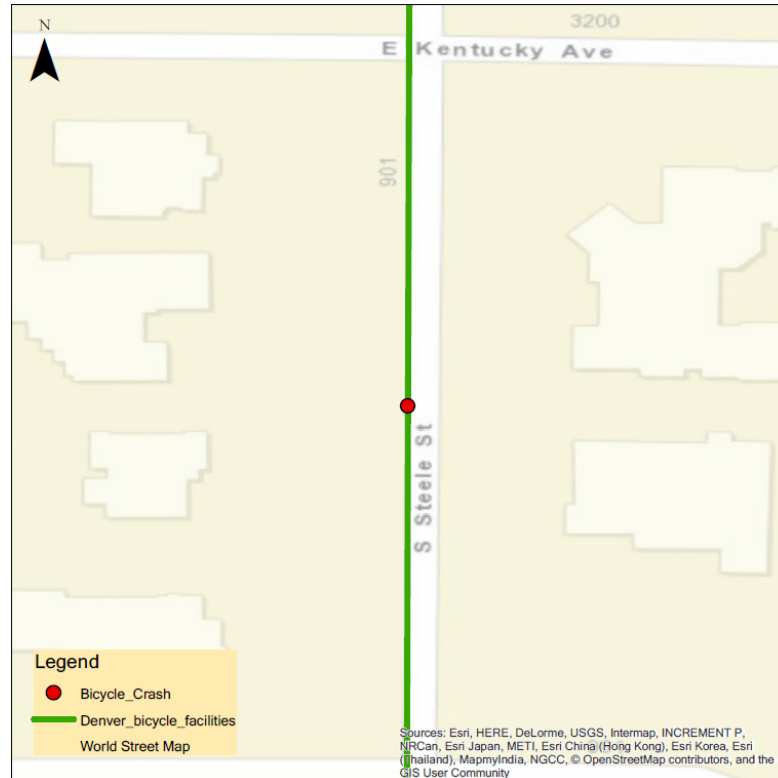
Chapter 8 Limitation

As with all studies, this study also had limitations. First, the dependent variable was not perfect. This thesis applied the crash count as the dependent variable. It is difficult to assess the crash rate only by the number of accidents that occurred in a particular segment. This study divided the length of the road by the crash count in order to normalize, but this crash rate is still inaccurate. Fournier, Christofa, & Knodler (2019) mentioned that the purpose of calculating crash rates is to normalize crash data to offset for exposure to different traffic volumes. To improve the accuracy of the crash rate, we needed the average volume of bicycles per day and data such as average volume of vehicles per day for each segment. Bicycle and motorized vehicles volume affected bicycle crash frequency (Fournier, Christofa, & Knodler, 2019). However, this thesis could not obtain auto-mobile traffic volume and bicycle volume data that corresponded with the crash data that was used.

Second, this study covers data that combines the number of crashes between 2013 and 2019. Usually, separate bike lanes are built on high-volume and/or speed with streets. (FDM, 2011) Therefore, a separated bicycle lane may have been installed where there was a high probability of an accident. For a more accurate investigation, it should be examined to compare the crash trend before and after the installation of the separated bicycle lanes. If possible, future research needs to assess the time series method.

Third, the study calculated by overestimated by accounting for the crash on all street segments touching the intersection when a collision at the intersection occurred. For example, crash occur in the midblock, one crash point intersects with one bicycle facility segment line. In this case, it is not problematic (See figure 8.1).

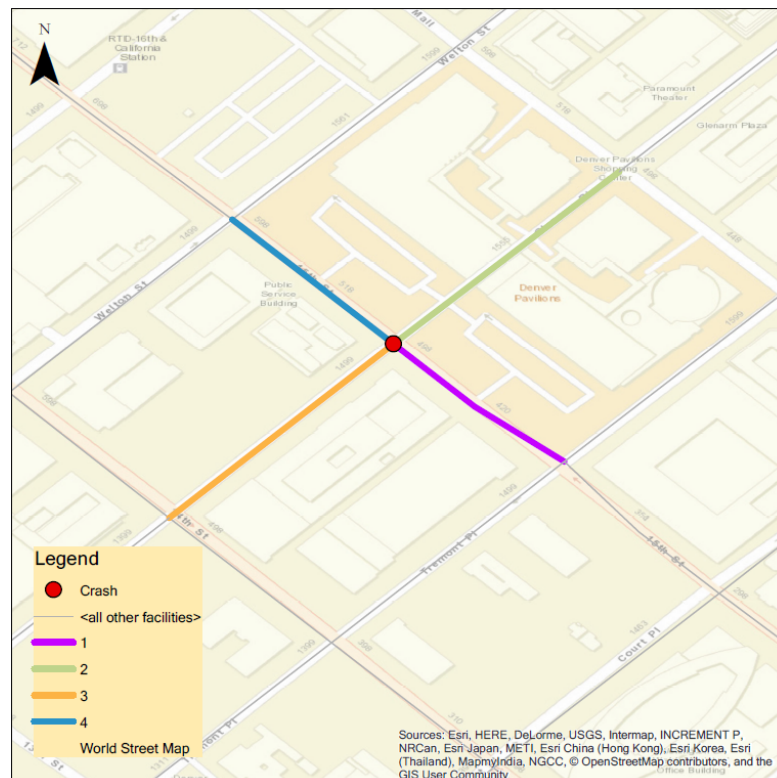
Figure 8.1 Example of crash point on midblock in city of Denver



However, when both segments are in contact with the intersection, and accidents that occur at the intersection are calculated for each segment that is in contact. Figure 8.2 shows an example of this situation. There are 1,2,3,4 segments. They are touching each other and share the same intersection. And there are crashes in that intersection. That crash count applies equally across all adjacent segments (1,2,3,4 segments). This can occur because the address of the accident in the intersection is only the intersection address and there is no information about the direction of the vehicle or the more adjacent segments. Instead, in descriptive statistics and the specific location of the bicycle crashes analysis (see page 25, 37), the overestimated crash count at an intersection does not happen because the crash count is not calculated by each bicycle facility segment but by the overall bicycle facilities.

If there is information about the exact location of the accident on intersection, that is, the direction of vehicles or where the adjoining segment of crash is located, it can be more accurately aggregate the individual intersection crash counts into the bicycle facility segment.

Figure 8.2 Example of crash on intersection in city of Denver



Fournier, Christofa, & Knodler (2019) mentioned that the analysis about bicycle safety is regularly evaluated operating one volume, failing to compensate for an important normalizer. Plus, they are implemented using excessively accumulated regional data (Fournier, Christofa, & Knodler, 2019). Hence, future research should take this into consideration when conducting bicycle safety studies.

Chapter 9 Planning Implications

As the number of cyclists grow in Denver and the flow of cycling into transportation increases, city planners need to pay more attention to bicycle safety in urban areas. Cushing et al. (2016) argued that bicycle infrastructure could help improve cycling safety and increase cycling. The literature consistently indicates that the lack of cycling infrastructure is the main detriment to increased cycling. Hence, many planners, policymakers, politicians, and activists consider that cycling infrastructure is an essential factor in bicycle safety. The amount of urban planning interventions for cycling environments and infrastructure has increased. Separated bicycle facilities are also significant aspects of bicycle planning these days. Separated bicycle facilities can be improving traffic safety for all street users, particularly when implemented as part of a “road diet” or other transportation calming projects (the U.S. Department of Transportation, 2015). City planners recognize the importance of separated bicycle facilities and have gradually increased the number of separated bicycle facilities throughout the country. Interest in separated bicycle lanes continues to grow in the United States, and the list of separated facilities planned and implemented nationwide is increasing rapidly (the U.S. Department of Transportation, 2015).

This study found that separate bicycle lanes have more crashes over time than shared roads, but the results of this study would also support to bicycle crash countermeasures and the identification of the most applicable solutions for bicycle crash issues in separated bicycle lanes. Plus, city planners can use these results to improve bike safety and it could be useful for politicians and legislators to pay attention to how they use and enforce physical separation in practice.

Chapter 10 Conclusion

To become a bike-friendly city, cities are increasing the installation of separated bicycle lanes. Separated bicycle lanes increase a cyclist's feeling of security and can encourage a more active lifestyle. However, an emerging issue is whether a separate bicycle lane is actually safer for a cyclist as actual traffic accident data has failed to determine if separated bicycle facilities are indeed safer.

This paper evaluated the impact of separated bicycle facilities on bicycle crashes by a Poisson Rate Regression analysis method, incorporating crash data with current bicycle facilities in the city of Denver, CO. The results largely confirmed the significant effects of separated bicycle lanes on a bicycle crash. The findings in this study were statistically significant, and all consequences affirmed the hypothesis of the thesis: separated bicycle facilities are more dangerous than the shared roads. The results of this study deduce that there are more bicycle injuries in the separated bike lanes than in shared roads. Of the various types of separated bicycle lanes, the cycle track was most likely to have bicycle crashes that occur on them. This indication provides evidence for urban and traffic planners as to whether a separate bicycle lane is the safer alternative to ride a bicycle in and if, on the other hand, it poses a real risk.

Finally, this study suggested that future studies should create and compare more accurate crash rates using bicycle and traffic volume data. Also, to examine the crash rate before and after the installation of a separated bicycle lane on a specific street, the future investigation will need to incorporate the time-series study

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CITY OF KEENE NEW HAMPSHIRE

ITEM #G.1.

Meeting Date: October 17, 2024
To: Mayor and Keene City Council
From: Sam Jackson/Bicycle Pedestrian Path Advisory Committee
Through: Patricia Little, City Clerk
Subject: **Bicycle Pedestrian Path Advisory Committee - Bicycle Safety Studies**

Council Action:

In City Council October 17, 2024.

Communication filed as informational.

Recommendation:

Attachments:

1. Communication_Jackson

Background:

On behalf of the Bicycle Pedestrian Path Advisory Committee, its Chairman, Sam Jackson, is providing various studies that support the safety of covered bike paths.

Dear Mayor, Members of the Keene City Council, and City Manager,

It has come to our collective attention that there are concerns regarding the safety of protected bicycle lanes. During the City of Keene's Bicycle & Pedestrian Path Advisory Committee's research on protected bike lanes in regards to the downtown infrastructure project, we cited numerous studies showing their safety not only for cyclists, but for pedestrians and vehicles.

Here are a sampling of studies and articles collected by BPPAC members which address the safety of protected bike lanes for pedestrians, vehicles and bicycles:

- Cycling lanes reduce fatalities for all road users, study shows: Building safe facilities for cyclists is one of the biggest factors in road safety for everyone. Bicycling infrastructure -- specifically, separated and protected bike lanes -- leads to fewer fatalities and better road-safety outcomes for all road users.
- Why cities with high bicycling rates are safer for all road users: Despite bicycling being considered ten times more dangerous than driving, the evidence suggests that high-bicycling-mode-share cities are not only safer for bicyclists but for all road users.
- Route Infrastructure and the Risk of Injuries to Bicyclists: A Case-Crossover Study: Streets with protected bike lanes saw 90 percent fewer injuries per mile than those with no bike infrastructure. Protected bike lanes reduce bike-related intersection injuries by about 75 percent compared to comparable crossings without infrastructure.
- Risk of injury for bicycling on cycle tracks versus in the street: Streets with protected bike lanes saw 28 percent fewer injuries per mile than comparable streets with no bike infrastructure. People were also 2.5 times more likely to bike on the protected lanes than in general travel lanes.
- Better Bike Infrastructure Saves Lives: We know that Complete Streets can reduce crashes by over 30% on average.
- District Department of Transportation Bicycle Facility Evaluation: Ninety percent of users say they feel safer bicycling on Pennsylvania Ave because of the new protected lanes.
- Measuring the Street: New York City's protected bike lane on 9th Avenue led to a 56 percent reduction in injuries to all street users, including a 57 percent reduction in injuries to people on bikes and a 29 percent reduction in injuries to people walking, as well as an 84 percent reduction in sidewalk riding.
- Memorandum on Bike Lanes, City of New York: When protected bike lanes are installed in New York City, injury crashes for all road users (drivers, pedestrians, and cyclists) typically drop by 40 percent and by more than 50 percent in some locations.
- Columbus Avenue Parking-Protected Bicycle Path Preliminary Assessment (pgs. 8-10): After New York City installed a protected bike lane on Columbus Avenue, bicycling increased 56 percent on weekdays, crashes decreased 34 percent, speeding decreased, sidewalk riding decreased, and traffic flow remained similar.
- Tired of Cyclists Riding on the Sidewalk? Build More Bike Lanes: Where protected lanes were installed in New York and Washington D.C., the number of bikes on sidewalks immediately fell by an average of 56 percent.
- Philadelphia Parking Separated Bike Lane Study: In the City's study, safety data from peer cities were reviewed to evaluate the effectiveness of PSBLs. Many of the reviewed case studies found that the installation of PSBLs reduce crash rates for motor vehicle drivers, bicyclists, and pedestrians, especially at mid-block locations where crash injuries tend to be most severe. Crashes involving a driver overtaking a person bicycling are the leading cause of fatalities for people bicycling in the US.
- Lessons from the Green Lanes: Evaluating Protected Bike Lanes in the U.S.: 96 percent of people using protected bike lanes believe they increased safety on the street.

People for Bikes cites numerous other bicycle facilities safety and usage statistics.

The Forbes article cited in a letter dated 9/12/24 from Jon Loveland to Mayor Jay Kahn, City Manager Elizabeth Dragon and members of the Municipal Services, Facilities and Infrastructure committee was a significant outlier in its claims that protected bike lanes are unsafe. Additionally, it should be observed that the author, Diana Furchtgott-Roth, is Director of Energy, Climate, and Environment at the Heritage Foundation (which has produced the much discussed Project

Several additional observations about data cited in the Forbes article:

- Jan Heine, quoted claiming bicycle lanes are less safe, is a racing cyclist, and usually separated bicycle paths are not the best solution for fast and confident bicycle users.
- The study the Furchtgott-Roth used (*The Relationship Between Separated Bicycle Lanes & Bicycle Crashes in Denver CO* by Wonsun Chang) examines the number of crashes, but with no context for the extent of use. The study admits they could not find this data.
- This study took multiple types of bicycle infrastructure and lumped them into two groups ("separated bicycle lane" and "shared roadways"). Painted bicycle lanes (separated by a 4-6 inch wide strip of paint, much like the lanes on Washington Street) are lumped into "separated bicycle lanes." While technically true, it skews the data to lump it in with bike lanes with barriers and bicycle paths (or tracks in the study). Painted bicycle lanes are not as safe as those with buffers (planters, bollards, parked cars or grade change), because autos can veer into areas without physical obstructions. By lumping them together, they make separated biking infrastructure look more dangerous than shared roadways:
 - 444 crashes on separated bike lanes; 379 crashes on shared roadways (study)
 - 140 crashes on safe, separated bikeways; 669 crashes on shared roadways and unprotected bike lanes (reallocating bike lane incidents)

The contractors and the committees who have advised the city along the way have put in extensive efforts to assuage these concerns before they could be raised. BPPAC would be remiss if we did not address these specific concerns with the research already conducted.

Sincerely,



Sam Jackson
Chair of Bicycle & Pedestrian Pathways Advisory Committee
618 Court Street
Keene, NH 03431



CITY OF KEENE NEW HAMPSHIRE

ITEM #C.4.

Meeting Date: January 2, 2025
To: Mayor and Keene City Council
From: Jon Loveland
Through: Patricia Little, City Clerk
Subject: **Jon Loveland - Downtown Infrastructure Project - Construction Management - Duration, Phasing and Sequencing**

Recommendation:

Attachments:

1. Communication_Loveland_Construction Management_Redacted

Background:

Mr. Loveland is commenting about the schedule for the Downtown Infrastructure Project and the fact that the buried infrastructure replacement project is anticipated to occur in three (3) phases over three (3) years/seasons. Mr. Loveland is suggesting that the project can be built in one (1) season and that the three-year timeframe is unnecessarily inflicting two (2) years of impacts on the businesses, residents, and other users of Downtown Keene.

Monday, December 30, 2024

Hon. Jay Kahn
Mayor
3 Washington St.
Keene, NH 03431

cc: Mitchell H. Greenwald, Chair, Municipal Services, Facilities & Infrastructure Committee
Kate M. Bosley, Chair, Planning, Licenses and Development Committee
Thomas F. Powers, Chair, Finance, Organization and Personnel Committee
Elizabeth A. Dragon, City Manager
Patricia A. Little, City Clerk
Randy L. Filiault, Vice-Chair, MSFI Committee

via Electronic Mail

RE: Downtown Keene Infrastructure Project – Construction Duration and Phasing

Dear Mayor, City Clerk, Select Members of the Keene City Council, and City Manager:

The City recently proposed implementing the Downtown Keene buried infrastructure replacement project in three (3) phases over three (3) years/seasons. As such, the City is wholly unnecessarily inflicting two (2) years of impacts on the businesses, residents, and other users of Downtown Keene. This will cause economic stress, hardship, and losses, potentially fatal to some businesses, which is easily avoidable with proper planning.

The Downtown Keene buried infrastructure project is composed of X cubic yards of excavation and backfill, Y lineal feet of water, sewage, stormwater, electrical, and I&C pipe or conduit, and Z square feet of surface restoration. It also includes various support and ancillary tasks and activities, including inspection and documentation, other project management and construction management, traffic control, public outreach, and maintenance of utilities (power, water, etc.) during construction.

I do not know the exact material “take-off” quantities for this project, but I do know the distance from Water Street to the UCC. I know the City purports the cost of this project to be something on the order of \$20M USD. I could be in error by 100% in any of these estimates (like the City commonly has been) and it would not change my analysis or the outcome. **This project can be built in one (1) season.**

Even the citizens of Keene recognize the requirements and issues associated with this type of project. In a recent Keene Sentinel article, Mr. Tim Pipp recognized what City staff have not (“Top Story,” Keene Sentinel, “City unveils plans to support downtown Keene businesses during 3 years of construction”, Ms. Sophia Keshmiri, 12/19/2024). Once traffic control is implemented for any “Phase” of this project, it materially impacts traffic for all parts of Downtown. This is the essence of a “bottleneck,” and the essence of your issues locating safe bicycle lanes and providing alternative vehicular routing during construction. Safe alternatives and alternatives

with sufficient capacity simply do not exist given the configuration of Downtown and the capacity of Downtown streets. So, if you are going to necessarily and significantly impact Downtown Keene, you might as well impact as much of Downtown as possible at the same time (since you will be doing so anyway) and execute the project as quickly as possible. The City is not doing so.

There are numerous national and regional contractors who are capable of building/installing this project in one (1) season. They have the required craft, rolling stock, access to rolling stock, professional management staff, means and methods, and experience to execute this project in one season. In fact, on large projects, they are capable of constructing \$20M of facilities in a single month. They are familiar with managing material procurement, laydown, stockpiling, and even securing housing for their staff. They, unlike the City, are familiar with managing escalation and inflation in material costs, so this is a specious argument being put forth by some, especially since material costs are a relatively small fraction of project costs. And the City should not accept any excuses for securing such a contractor(s), as they are certainly willing to compete and execute a project of this size, or even smaller, for the right "client". If necessary, the City could secure multiple, separate contractors to execute this project. These larger contractors can even utilize the local contractors to some extent to ameliorate political concerns; in fact, this is also a standard practice.

The way this is done is to open multiple headings and work in more than one place at the same time. In fact, you open as many headings as is necessary to meet a schedule milestone. This is a standard practice, and applicable to the Downtown Keene project. In this case, there is simply no doubt all three proposed phases of this project, or more, could be executed simultaneously. And there is no additional cost for doing so. The cost to install what I describe above is what it is; it is fixed or can be fixed. In other words, the construction cost is the same whether it is done over one, two, or three years, because the quantities do not change, and the labor required to install and manage those quantities does not change. The only costs that do change are the fixed overhead the City will be charged and some other rental charges, which might actually be higher than necessary using the method the City proposes.

What is clear is that the City does not have the ability to manage the project as I have described. Much larger projects than the Downtown Keene buried infrastructure project have been built with fewer "Owner" staff. The City simply needs to hire the necessary resources to manage the project and have capable resources on the permanent City staff with the ability to manage those temporary resources. I have begun a review of the City's financials and credit, and I see no funding or financial limitation that would limit executing this project in one (1) year, absent the obvious public support issue for bloated and underestimated project costs and rate impacts and costs for an otherwise overwhelmed tax and rate base.

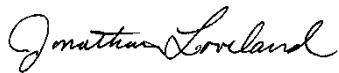
The City has wasted at least eighteen (18) months (or 1.5 years) planning for (I think of it as recklessly "shoehorning") bicycle lanes they should know are unsafe but certainly know will not be utilized to any large extent. Instead, the City could have spent that time, but certainly should spend another year now, to properly plan and refine their contractor solicitation, selection, contracting and construction sequence. One shudders to think what the change orders,

construction delays, and additional costs are going to be if the City believes this is a three (3) year project and performs as they have on other construction projects.

In failing to do so, the City has made clear their preferences, and those do not include expediting this project and mitigating the economic impacts of their planning and methods on the most critical commercial and tourism location in the City.

The City is therefore wantonly and intentionally causing unnecessary economic pain and suffering, causing other negative impacts to residents, taking/causing unnecessary risks, and negatively impacting the future of the City.

Sincerely,



Jonathan P. Loveland, PE
Irvine, CA

[REDACTED]
[REDACTED]

Cc:

Mgreenwald@keenenh.gov

Kbosley@keenenh.gov

Tpowers@keenenh.gov

Edragon@keenenh.gov

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CITY OF KEENE NEW HAMPSHIRE

Meeting Date: January 2, 2025

To: Mayor and Keene City Council

From: Municipal Facilities, Services and Infrastructure Committee, Standing Committee

Through:

Subject: **Recommendations Regarding Invasive Species Education and Management - Conservation Commission**

Recommendation:

On a vote of 5-0, the Municipal Services, Facilities, and Infrastructure Committee recommends accepting the recommendations regarding invasive species and education management as informational.

Attachments:

None

Background:

Chair Greenwald asked to hear from representatives from the Conservation Commission.

Sparky Von Plinsky, Conservation Commission chair, and Councilor Bobby Williams introduced themselves. Mr. Von Plinsky stated that he will begin by explaining what invasive species are. He continued that invasive species are ones that are not native to an area, which can out compete native species. The Conservation Commission is mostly focused on invasive plants. Examples are Norway Maple, which are problematic and can take over entire tracts of forest; Japanese Knotweed; or Buckthorn. Once you see these invasive species, you cannot unsee them. They are everywhere in Keene. That is the point of the Commission's letter. This has started to become a real problem. Once invasive species outcompete the native species, the native species can go extinct.

Mr. Von Plinsky stated that the letter covers the Commission's lengthy discussions. Something that kept coming up is that there needs to be a single point of contact at the City for dealing with invasive species. They hear about people calling the City to report invasive species and asking what to do about it, and because there is not a single point of contact, the message either did not get to the right person and was not handled, or was handled in an unproductive way. Any solution needs to be a public/private partnership. A huge group of wonderful gardeners and horticulturalists are ready, willing, and able to help, but they need to have that coordination to try to make that happen. This does not need to be something they hand off to the City for the City to completely take care of it; this is something that can be a solution across the board.

Councilor Williams stated that he has been hearing about the invasive species problem ever since he was elected. He continued that one of the reasons he was elected, in fact, was to do something

about invasive species. He got himself nominated to the Conservation Commission then convinced Commission members that this was a real problem and got their permission to start a regular program of removing invasive species on a volunteer basis. Every year for the past four years, they have spent five or six days going out and removing invasive species like Japanese Knotweed or Oriental Bittersweet. It is a good way to educate the public. He realized the scale of the issue is much bigger than anything he and the volunteers can handle. They need the City's institutional power, to understand where the problems are, develop long-term plans, and organize volunteers better than he can.

Councilor Williams continued that the last time he and Mr. Von Plinsky were here they talked about bringing a street tree program to Keene, and he is grateful that has been funded for next year. As they are funding street trees, they need to realize something is out there killing trees. They need a better effort of containing the bittersweet vines that choke and kill trees. Not having to replace trees would save money.

Councilor Williams concluded that invasive species are a big problem, which the Conservation Commission cannot handle, and someone in the City needs to have the responsibility of knowing about this, directing resources and volunteers.

Chair Greenwald asked how to get rid of knotweed. Councilor Williams replied pull it out, year after year. He continued that herbicide can be used, but they do not have volunteers use herbicide.

Councilor Favolise expressed appreciation for the letter and presentation. He continued that he, Councilor Tobin, and Councilor Haas spent a night pulling knotweed in the Robin Hood Park area. He was surprised there was so much of it, after three or four years. It was immediately clear to him that this problem will not go away on its own. His question is whether grant funding is available for this sort of project or program, or for the point of contact person. He wonders if there is a way to do this that minimizes the impact to taxpayers.

Mr. Von Plinsky replied that he cannot answer that question entirely, but there are definitely resources available. He continued that some aspects would be education for City staff and citizens, and UNH has those resources available. They have a class that is like "invasive species boot camp." Potential funding for a point of contact person is not something he can speak to.

Councilor Workman stated that she wants to thank Councilor Williams for his efforts on that volunteer campaign. She continued that she has unfortunately never been able to attend one of those, but they do amazing work that is very much needed in the city. Everyone is usually raving about how much fun they have doing it. She supports these recommendations. She has questions, like Councilor Favolise, about funding the point of contact person, but she does think it is necessary and she would like to hear more about that at a later date.

Chair Greenwald asked if members of the public had any questions or comments.

Bob Milliken of 30 Allen Ct. stated that he is part of the Hogback Mountain Conservation group, dealing with invasive species there. He continued that he has joined the efforts in Keene recently. In Keene, he has noticed that some of these invasive species are dangerous to people. Wild parsnips and wild chervil, for example. Seeds that fall off can take two years to germinate, that even if you pull the plant out, it could grow back in two years. Touching the sap can result in a second-degree burn. The volunteer work to remove invasive species in Keene is great. There is hope. He supports the Conservation Commission's work and hopes the MSFI Committee does, too.

Duncan Watson, Assistant Public Works Director, stated that he agrees with everything that

Councilor Williams and Mr. Von Plinsky said. He continued that this is a huge problem that will not be easily solved. The amount of resources it would take to deal with this in an effective manner would overwhelm the City's budget. What they can do is learn about the issue and develop best management practices to prevent more of these invasive species from getting a hold. He thinks that a point of contact person would logically go in the Public Works Department and the Highway Division. They will be doing work to better understand the scope of the problem. Years ago, he and then-Director Kürt Blomquist developed a capital project to deal with just the Emerald Ash Borer. When they finished putting the numbers together, it was in the hundreds of thousands of dollars over multiple years. The question is, to what effect. In 2005, his property was flooded, and his riverbanks have been covered with Japanese Knotweed. He has been personally out there summer after summer, trying to deal with it, and it is a losing battle. These plants are like apex predators. Once they get a hold of something, they are tough to get rid of. The City has done experimental removals on Beaver Brook in several locations, but even with some success in those areas, they see the plant starting to return and repopulate. This pervasive problem will require long term, overarching solutions. He is not sure how realistic some of those are.

Councilor Ed Haas asked if there are examples of cities the size of Keene that have been successful with this. Mr. Von Plinsky replied that he cannot point to any examples, but he can say for sure that everyone is grappling with this issue. He continued that it is not just a Keene issue. The invasive plants cross rivers, ride on tires into other towns, (and so on and so forth. There must be case studies for Keene-sized towns but he personally does not know of them.

Chair Greenwald replied that those would be interesting to hear. He continued that he has seen knotweed grow through asphalt, which is astounding.

Councilor Tobin stated that she has done a lot of research on this since she started joining the removal efforts. She continued that there are towns in NH that have invasive species management plans, which she assumes include a point of contact. To attest to the education piece, after she first joined the volunteers in pulling knotweed, she went home and found some in her neighbors' yard, and now periodically pulls knotweed at United Way, which comes back within a couple days. Usually, after five years of persistence, you can get rid of it. She has noticed many invasive vines hanging on the wires. She called to try and have that removed. People came and cut it and told her to call the City to have it removed.

Andy Bohannon, Deputy City Manager, stated that he concurs with Mr. Watson's comments. He continued that Carrah Fisk-Hennessey, Parks & Recreation Director, has been working with the Conservation Commission to create educational events for the spring, specifically for the Ashuelot River Park, the Patricia Russell Park, and the maintenance needed along Beaver Brook. In Ashuelot River Park just beyond the bridge, you will see an opening, which was previously all knotweed. The Friends of Ashuelot River Park have been doing a great job over the last three to four years of maintaining that specific area. It is a great example of how if you work at it year after year, they can continue to manage it. The Ashuelot River Park Advisory Board has struggled due to the amount of it, but they continue to do due diligence in their efforts. He commends the Conservation Commission for bringing this forward.

Jim Sterling, of Jordan Rd. stated that Japanese Knotweed is tremendously invasive and there will be no easy solution. He continued that it mostly will be hand labor. Nothing can stop this species. He sees it taking over the shorelines, to the point where sometimes people cannot even get to the shore to fish because there is so much knotweed. It also grows along the road and becomes a danger to the public when they cannot see around a corner. The NHDOT has limited money. They choose the corners that have the worst problems, rip up the knotweed, and put down matting to prevent it from growing. He used to ask people at NHDOT if they had someone who could help with this, and they

replied that they only had one person with a pesticide license, and he is not working there anymore. Knotweed started ten years ago. It is like going through a jungle. He is not sure pesticides are the solution. It is about labor, picking and choosing the areas they feel are most important, and putting their labor there. The solutions are labor and money, not studies. Knotweed is the number one invasive species, but bittersweet is a problem, too.

Heather Atwell from Pearl St. stated that she has a summer house in upstate NY, and about ten years ago, they had a program to get rid of knotweed. She continued that she has a document about that and would be happy to share it with the City. It involves chemicals injected into the plants, and it worked.

Rick Fulton stated that he is a new resident to Keene. He continued that as of six months ago, he was the Director of Public Works for the City of Port Angeles in Washington. The only way they could deal with the invasive species there was with an effort with the state. The County led the effort. The University of Washington Extension Office provided the expertise. The City staff in Parks and Recreation and Transportation joined the efforts, and all together, they were able to tackle just the critical areas. The City of Keene needs to look at State, County, City, and universities working together. Volunteers are needed, too, which takes a lot of planning, but those are his recommendations.

Councilor Workman made the following motion, which was seconded by Councilor Filiault.

On a vote of 5-0, the Municipal Services, Facilities, and Infrastructure Committee recommends accepting the recommendations regarding invasive species and education management as informational.



CITY OF KEENE NEW HAMPSHIRE

Meeting Date: January 2, 2025

To: Mayor and Keene City Council

From: Municipal Facilities, Services and Infrastructure Committee, Standing Committee

Through:

Subject: **Tim Pipp/Beeze Tees Screen Printing - Proposal to Add the Necessary Infrastructure to Accommodate Banners Across Main Street**

Recommendation:

On a vote of 5-0, the Municipal Services, Facilities, and Infrastructure Committee recommends the communication regarding banners across Main St. be accepted as informational and to have City staff report back to the MSFI Committee on their findings.

Attachments:

None

Background:

Chair Greenwald asked to hear from Tim Pipp.

Tim Pipp stated that he is the owner of the Beeze Tees Screen Printing on Main St. He continued that over the years, he has talked with numerous downtown business owners about potentially putting up a banner across Main St. His proposal tonight is for the installation of poles to hold a banner. He proposes putting them in the existing place in front of Ted's Shoe and Sport and The Works. It would span Main St. The poles are about 75 feet apart. The poles' purpose would be to hold a banner to promote events and other things happening on Main St. Most banners like this prohibit logos or business use. One reason he raises the issue now is he thinks it would be a great time to do this, with the Downtown Infrastructure Project happening. A banner could let people know Main Street is open. He thinks this is a simple ask. The City will be replacing the lights anyway, so they could replace them with these taller poles.

Chair Greenwald asked to hear from Public Works.

Mr. Lussier stated that this is a very interesting suggestion, and he did not know much about these banners systems until this suggestion came about. He continued that he reached out to some manufacturers that make these kind of systems to learn a bit about them. He was surprised to find that the systems are more affordable than he expected, about \$25,000 to \$30,000 for the materials, not including installation for a system sized for what they have, about 75 feet across. The light poles currently used downtown would not be able to support something like this, because the banner would be big, hang high up in the air, and catch a lot of wind. The poles have to be designed to carry that load. The poles themselves are fairly substantial. Another thing to keep in mind is that there would

be two poles on each side with taut guy wires on the top and the bottom of the banner. The banners themselves slide in and out from the ends and a pulley system retracts and extends as they change the banners. Gem Graphics gave him an estimate of about \$1,400 per graphic. He imagines that 10 or 12 per year is something the City Council would have to budget for if they wanted to go in that direction.

Chair Greenwald stated that Mr. Pipp prints these, too. Mr. Pipp replied that was correct, but this proposal is not self-serving and he is not going to give his number. He is friends with Gem Graphics. Many cities in New England and the country do these over their Main Streets, including Concord, Portsmouth, Brattleboro, and Manchester. Municipalities are not buying and hanging the banners. The event organizers buy the banners, through sponsorships, and hang them. The City would need to have some part in the hanging process, but that expense is different.

Mr. Lussier stated that he apologizes for naming Gem Graphics. He continued that he had reached out to them for his own education.

Chair Greenwald stated that as he understands it, the cables are rather substantial, not the thin kind. Mr. Lussier replied that they would be something like quarter-inch stainless steel cables, permanently affixed. He continued that this would be permanent, rugged infrastructure in place. Chair Greenwald replied that the key word is "permanent," as the cables would stay up whether there was a banner or not. He asked if that would be problematic for tall trucks. Mr. Lussier replied no, the cables would be high enough that they would be above the clearance heights, per NHDOT standards. The cables might not be very attractive when there is not a banner hanging.

Chair Greenwald asked if another option is attaching to the buildings. Mr. Lussier replied that he would let the City Attorney weigh in on the legality of attaching to people's buildings, in the indemnification language they would need for that. Chair Greenwald replied that he is just posing questions for consideration, because a lot of thought has to go into this, including how it would fit in with the Downtown Project.

Councilor Favolise stated that Mr. Pipp mentioned other cities with similar systems. He continued that what comes to his mind is what the process looks like for approving banners to be hung. They are thinking about downtown events. He knows that some cities have had controversy – for example, Concord – about what can and cannot be displayed. He wants to keep Keene out of the headlines for that sort of reason. Mr. Pipp replied that he is more familiar with the system in Manchester, because Beeze Tees does their banners. He continued that (the system) lays out what you can and cannot include as text, plus the banner's weight and size, and more.

Councilor Workman asked if Mr. Lussier could briefly explain the installation of the message board in front of the post office and how that would differ from this, in terms of the process for getting your information or event listed. Mr. Lussier replied that he is not involved with that bulletin board and defers to the City Manager. He continued that he believes the City Clerk's Office handles those temporary signs.

Chair Greenwald stated that he imagines the question of content is clearly spelled out in those two agreements. He continued that there are free speech considerations. Mr. Pipp replied yes, the banners cannot be for specific business logos, they have to be geared around an event.

Assistant City Attorney Amanda Palmeira stated that the City Attorney's Office is paying attention to this for First Amendment reasons. She continued that there is a lot of nuances. The Supreme Court heard a case last year related to this. She would be happy to talk about and work on this topic, but tonight they are just talking about the construction. They could talk about the process later.

Councilor Filiault stated that he has lived here his whole life, and especially during the holiday season, downtown used to have multiple cables across Main St., Washington St., and Court St. He does not remember if those were taken down after the holidays, or permanent. Regarding Concord, he and his wife drive through there frequently, and both ends of Main St. have banners going across. It is a phenomenal advertising method, as he and his wife saw an event announcement they otherwise would not have known about, and it worked – they returned to Concord for the event. He can attest to the fact that these banners work well. This definitely has viability for Keene. It would probably get tied into the Downtown Infrastructure Project.

Chair Greenwald thanked Mr. Pipp for bringing in this good, creative idea. He continued that he thinks a cable is still up across Lamson St. He asked if the Committee had further questions for Mr. Pipp. Hearing none, he asked if members of the public had any questions or comments.

Ted McGreer stated that he owns the property at 115 Main St. He continued that Roger Weinreich owns the property across the street, and the two of them have been talking about this for years. It used to be that when you entered Keene, the city welcomed guests and visitors with a beautiful banner that announced Pumpkin Fest, a pancake dinner, or whatever else. He is a fan of that. This is a great opportunity to bring some of that nostalgia back to the City they love. Keene's downtown is unique, and people come from all over to see it. He wants the Committee to weigh in on this. He does not think it needs to be a \$20,000 cable system.

Councilor Filiault made the following motion, which was seconded by Councilor Tobin.

On a vote of 5-0, the Municipal Services, Facilities, and Infrastructure Committee recommends the communication regarding banners across Main St. be accepted as informational and to have City staff report back to the MSFI Committee on their findings.

Chair Greenwald stated that they will take agenda item 6 next.



CITY OF KEENE NEW HAMPSHIRE

Meeting Date: January 2, 2025

To: Mayor and Keene City Council

From: Municipal Facilities, Services and Infrastructure Committee, Standing Committee

Through:

Subject: **Request for a Marked Crosswalk at the Intersection of West Street and Pearl Street**

Recommendation:

On a vote of 5-0, the Municipal Services, Facilities, and Infrastructure Committee recommends the City Manager be authorized to install a marked crosswalk and pedestrian beacons on West Street, at the intersection of Pearl Street.

Attachments:

None

Background:

Chair Greenwald asked to hear from the Public Works Director. Mr. Lussier stated that some folks in the audience requested this and they might want to speak to it first.

Heather Atwell of Pearl St. stated that she submitted this request through "See, Click, Fix." She continued that she had been seeing those signs for about two years and finally submitted something. She knows the Downtown Project might supersede this, but she sees many people who walk from the hotel that is on West St. across to Pearl St., down Pearl St. to where Walmart and Target are. With the new car wash that was just built next to the new coffee shop, they were putting in beautiful sidewalks and greenery. Meanwhile, she had been thinking for years that she wanted to submit a "See, Click, Fix" request because when she approaches the stop sign at Pearl Street for West Street, there are four lanes on West Street, and all of these pedestrians are running across to get to work or wherever they are going. When she first submitted this request, the reply said that this is part of something that might happen in 2027. Then when she saw the sidewalks going in as part of the carwash development, she wondered if they could just put something there, because it looks dangerous and scary for all the people crossing. She does not know what the City will do with her request, but she has expressed her thoughts.

Michelle Knapp of Pearl St. stated that she is sure everyone who travels West St. has seen the sheer number of cars that go back and forth West St. all day. She continued that daily, she sees people trying to cross from West St. to Pearl St. across those four lanes of traffic, including people with children, people with baby carriages, and people on bicycles. It is terrifying, because people drive at scary speeds on West St. She realizes there are multiple crosswalks, one down by the Hannaford Plaza and one near CVS, but the West St. and Pearl St. intersection feels like an accident waiting to

happen. She thinks a lighted crosswalk there could potentially slow down traffic on West St.

Mr. Lussier stated that he thanks Ms. Atwell for joining them tonight. He continued that the request she submitted via See, Click, Fix was anonymous, so staff was not able to contact her. He is glad she got wind of this meeting and came tonight. He also thanks her for plugging the See, Click, Fix system, which is a great tool the City uses. Staff is happy that folks are catching on and submitting many requests. Staff received Ms. Atwell's request toward the end of October. Generally, Public Works recommends against adding mid-block crossings, which tend to have problems. Oftentimes, drivers are not expecting people to cross in the middle of a block between intersections, which leads to drivers not yielding to pedestrians in the crosswalk. As staff typically does with a traffic calming/traffic control request, they begin with an engineering study. The team goes out to look at the circumstances, looks at the data they already have, or collects more data if needed. Then, they determine if a request is appropriate for the location. For this location, staff agrees that this makes a lot of sense.

Mr. Lussier continued that the Manual on Uniform Traffic Control Devices (MUTCD) is Public Works' guidebook for how to do traffic controls. It has a number of criteria to look at when considering a mid-block crossing, which the MUTCD calls a "marked crosswalk at an uncontrolled location." Criteria include the distance to the next legally marked crosswalk, traffic volume, number of lanes that need to be crossed, traffic speeds, and pedestrian volumes. All of these factors are weighed. In this instance, it is a four-lane roadway with no median. Pedestrians need to cross a long distance, which can be especially challenging for folks with limited mobility. There is no median for pedestrians to pause at. It is a long distance to the next crosswalk, 800 feet to west at the plaza entrance, and 1,100 feet to the east at the Island St. intersection. Traffic volumes, per 2023 NHDOT measurements at the Ashuelot River Bridge, averaged about 19,000 vehicles per day. Thus, it is a very high-volume roadway. The standard says that a roadway with four or more lanes of traffic without a raised median or pedestrian refuge and an Average Daily Traffic (ADT) of over 12,000 vehicles should also consider conspicuity enhancements. These are things like pedestrian-activated beacons or additional signage.

Mr. Lussier stated that staff recommends the crosswalk be installed, and that it be upgraded with RRFP pedestrian beacon system. He continued that if the Committee and Council agree with that recommendation, staff will put in a request to the Finance, Organization, and Personnel (FOP) Committee to fund that flashing beacon. The price will be a little less than it normally would be, as they were able to harvest some spare parts from other installations where they did not need the signs and beacons that were installed. It will be about \$7,500 to install the beacon system for this crosswalk. They propose doing that with City forces once the weather permits.

Chair Greenwald stated that he is glad to hear this.

Councilor Filiault stated that they all drive West St. and see this regularly. He continued that on lower Main St., pedestrians have a "halfway safety point," but this does not exist on West St. He is concerned about someone getting stuck out there. He knows putting a median down the middle is not in the budget, but he wonders if there is a way to create some sort of halfway point. Crossing West St. sometimes feels like being stuck in the middle of nowhere, if you are in the middle of the street and cars are coming from the other way. The beacons will help by drawing attention, but with four lanes of traffic zipping by, it is hard for one person to judge how long it will take to cross. His question is whether it is possible to create something in the middle to make it a little bit safer, even if it is just paint, for someone to pause when they are halfway across.

Mr. Lussier replied that he would not recommend that. He continued that currently, the curb-to-curb width would not accommodate a substantial enough median in that area without narrowing the lanes

more than they would like to see. However, the timing on the beacons can be adjusted based on the crossing distance. They would be programmed so that even people with limited mobility still have time to cross in the crosswalk while the lights are flashing. As he has mentioned in the past, those beacons do not change State law. Drivers are required to stop for pedestrians in the crosswalk whether a beacon is there or not. Beacons just draw the drivers' attention and give pedestrians a better chance of being seen. Once someone is in the crosswalk and drivers have stopped to let them cross, it is incumbent on the drivers to wait until the person makes it across.

Councilor Filiault replied that he understands what drivers are supposed to do, but they do not always do what they are supposed to do. He continued that it is more of a safety concern when the driver does not do what they are supposed to do. Mr. Lussier stated that as Ms. Atwell mentioned, this area is slated for much more significant improvements in the near future. He continued that he knows 2030 does not sound like the near future, but staff will start designing the project in just a couple years. Councilor Filiault replied that he just wants to make sure they make this as safe as possible until the major developments happen in a few years.

Chair Greenwald asked if there were any further questions from the Committee or public. Hearing none, he asked for a motion.

Councilor Tobin made the following motion, which was seconded by Councilor Filiault.

The Municipal Services, Facilities, and Infrastructure Committee recommends the City Manager be authorized to install a marked crosswalk and pedestrian beacons on West Street, at the intersection of Pearl Street.

Ian Matheson of 11 Court St. stated that he is an avid pedestrian and shares Councilor Filiault's concerns about drivers not stopping. He continued that fairly often, even with these illuminated crosswalks, drivers do not stop. It is as if drivers think they do not need to stop for a pedestrian not yet in their lane. He wonders if they can install something similar to what is on Washington St. and Vernon St., a red light that stops traffic. He is concerned about the four lanes of traffic that pedestrians have to traverse through. He is not sure if the flashing yellow lights will prevent any accidents or injuries.

Chair Greenwald stated that Mr. Matheson's concern is well taken, but he assumes that the process of getting a stop light in the middle of West St. would be much more problematic than this quick and simple solution. Mr. Lussier replied yes, a pedestrian hybrid beacon is a little different and not something they have in the city. They are signal systems that go over the roadway and have stop lights associated with them, but they are pedestrian-activated. Those systems are significantly more expensive. In this area, they might have to have that reviewed by the NHDOT, because it is close to the State highway. At a certain point on West St., the NHDOT has a review prerogative for the City's improvements, but he does not recall exactly where that is. It might be the Ashuelot River Bridge. Regardless, that would be a much more involved project and much more costly.

The motion passed with a vote of 5-0.

Chair Greenwald stated that they will take agenda item 7 next.



CITY OF KEENE NEW HAMPSHIRE

ITEM #D.4.

Meeting Date: January 2, 2025

To: Mayor and Keene City Council

From: Municipal Facilities, Services and Infrastructure Committee, Standing Committee

Through:

Subject: **Heritage Commission - Design Details in the Downtown Infrastructure Project**

Recommendation:

On a vote of 5-0, the Municipal Services, Facilities, and Infrastructure Committee recommends the Heritage Commission communication regarding Design Details in the Downtown Infrastructure Project be accepted as informational.

Attachments:

None

Background:

Chair Greenwald stated that now they move into talking about the Downtown Infrastructure Project. He continued that they are talking about design issues and details with this agenda item and the next. Once they get into the Stantec presentation, they will also be talking about communication, the construction timing, and the ombudsman, issues that were brought forward at the FOP Committee meeting.

Chair Greenwald stated that this is a communication from the Heritage Commission about the design details in the downtown project. He asked who is presenting this. The City Manager replied that she is not sure anyone is presenting it. She continued that it is a letter of information from the HC regarding their review of the project.

Councilor Workman made the following motion, which was seconded by Councilor Filiault.

The Municipal Services, Facilities, and Infrastructure Committee recommends the Heritage Commission communication regarding Design Details in the Downtown Infrastructure Project be accepted as informational.

Mr. Lussier stated that the consultant met with the Heritage Commission while they were discussing these things. He continued that the options and choices the presentation will be showing the Committee in a few minutes have been informed by the feedback they have received. Where there are recommendations and suggestions from the Heritage Commission that staff may or may not agree with, he will point that out.

Mayor Jay Kahn stated that he thinks the Commission's comments are significant. He continued that when he came to Keene many years ago and took up his position at Keene State College, the design concepts brought into the Main St. design were the guiding principles for the Appian Way, the quadrangle, and more. Ashuelot River Park is another example of where downtown designs were picked up. He thinks that the Commission's suggestion that the City recognize some of those principles that have been brought forward are worth preserving in the consideration of the downtown design. These are significant principles that get carried forth by others in the City as they are making their design decisions.

The motion passed by a vote of 5-0.



CITY OF KEENE NEW HAMPSHIRE

Meeting Date: January 2, 2025

To: Mayor and Keene City Council

From: Municipal Facilities, Services and Infrastructure Committee, Standing Committee

Through:

Subject: **Approval of Final Design Details for Downtown Infrastructure Project
(excludes approved roadway, sidewalk, and bike Lane physical layouts)**

Recommendation:

On a vote of 5-0, the Municipal Services, Facilities, and Infrastructure Committee recommends the City Council approve the final design for the Downtown Infrastructure Project, and that the City Manager be authorized to do all things necessary to implement the project with the street furnishing, materials, and design preferences discussed.

Final Design Details

Main Street

- Sidewalks – Option 2
- Bike Lanes – Option 1
- Raised Crosswalks – Options 1 and 2
- Bike Racks – Hold off until input from BPPAC is received.
- Trash and Recycling – Option 1
- Hydrants – Option 4
- Planter Curbs – Option 1
- Tree Wells – Match existing tree cast-iron grates
- Traffic Signal Bases – Option 1
- Lighting - Power Pedestals - Option 2 and 3, no need for USB/C outlets
- Light bollard – Option 2

Gilbo Ave. and Railroad St.

- Catenary Lighting – Bare bulks (with canopy cage option as a bid alternate)
- Leaning Rail - Remove from scope

Railroad Square

- Railroad Tracks - Option 1 with tracks
- Surface Options – Option 2

- Gateway Arches – Option 1
- Shade Structure – Option 3

Central Square

- Surface Treatments – Standard Concrete plus Unit Paving at center of the square
- Seating – Combination of Options 2 and 3 (depending upon the location downtown)

Attachments:

1. 2024-12-18_MSFI Presentation_Final reduced
2. 2024-12-30_MSFI Preference 8.5x11 Council Packet (002)

Background:

Chair Greenwald asked the City Manager to introduce this presentation.

The City Manager stated that these are the final design decisions before bidding out the Downtown Infrastructure Project. She continued that they include decisions related to things like the type of seating they would like, the type of pavement or stamped concrete or whether they want color in certain areas, how they want the Railroad Square design to look in terms of the materials used, and the design for the Gilbo Ave. area, regarding the materials used. These are not physical designs, but rather the last pieces of aesthetic design issues. Stantec will walk the Committee through it, breaking it apart so the Committee can give a consensus on each one. There are recommendations from the Public Works Department when they make those decisions, based on the durability and maintenance issues tied to different materials that may be chosen.

Ed Roberge, Civil Engineer with Stantec, introduced himself and his colleagues Bob Corning, Design Team Lead, and Dave MacNamara, Associate Project Manager.

Mr. Roberge stated that the project has been going for a while now, and they completed the preliminary design some time ago. He continued that there are a number of design details they want to flesh out tonight. They will talk about a number of factors that encompass all phases of the project. They have been talking about the project in specific areas, like Main St., Gilbo Ave., Railroad Square, and Central Square.

Main Street

Mr. Roberge stated that beginning with Main St., from where they left off at the preliminary design presentation at the last meeting, these are some of the same details the Committee has seen before. Elements they will talk about tonight include sidewalk materials, tree planters, the bike lanes, crosswalks, the ways to plant trees, seating benches, and more. Stantec is approaching the 60% completion on the design package. These selections tonight will help them finish that package set. There are decision matrixes to go through tonight, based on the character areas he mentioned before. They will talk about material types in amenities and equipment and all the different options.

Surface Treatments on Sidewalks

Mr. Corning stated that the design team has always tried for the sidewalk surfaces not to have just a continuous level plane of concrete. He continued that they have always thought about the fact that the main pedestrian thoroughfares would be concrete, but that there were opportunities for accents,

either along the face of the building in the furnishing zones, or in the strip between the bike lane and the curb. They reviewed the materials options with Public Works in terms of durability and maintenance. Option 1 would be standard concrete. There are opportunities to do different scoring patterns, different kinds of broom finishes, or potentially exposed aggregate. (Option 2) is stamped concrete, which can have different patterns, colors, or textures. That would probably be in combination with a standard concrete. The photos in the PowerPoint presentation show examples of how it is used as an accent.

Mr. Roberge stated that they will talk a little bit about costs as they go along. He continued that considering the costs of the options is important.

Mr. Corning stated that option 3 would be a combination of concrete again, but with the introduction of a unit paver, which could be brick or concrete. Stantec has had success with these types of paver systems in urban environments. Installation is important so they hold up and are durable, but there are potential maintenance issues and increased cost.

Mr. Roberge stated that the Public Works staff prefers option 2, the standard and stamped concrete combination. Option 3 would be most expensive, option 1 would be least expensive, and option 2 would be in the middle.

Chair Greenwald asked what the Committee thinks. He continued that members of the public can share their thoughts, too. He asks everyone to try to be succinct, as they have many decisions to make tonight.

Councilor Filiault stated that he thinks overall cost is going to be very important, because there are many decisions to make. If the Committee says, "Option B costs a little more, but that's okay" all the way through, the costs increase a little bit more and a little bit more, and at the end, the costs have increased a lot more.

Councilor Filiault stated that regarding downtown sidewalks, he has lived here a long time and seen many variations. He recommends they keep it simple. Any time a surface is not smooth, it creates a problem for people who use wheelchairs or crutches. Thus, he thinks that at least for the main areas that are heavily traveled by pedestrians, the surface should be standard concrete. That is cost efficient and requires little maintenance.

Chair Greenwald stated that something else to think about is that they are doing this project once, or at least, it is the last time in his lifetime that a project like this will happen, so they should not be too cheap. They should come up with a high quality project. He does not recommend they go to the extreme, because as Councilor Filiault says, durability and cost are important, but so are aesthetics. They want to have a project they are proud of.

Councilor Favolise stated that aside from the cost of the unit pavers, he recalls having this conversation at the Railroad Square workshop. He thinks about ice and snow. At first, unit pavers look great, but he worries about how they will be after a few New England winters. He thinks option 3 should be off the table. Chair Greenwald replied that he agrees.

Councilor Tobin stated that she likes option 2. She continued that she likes that it creates some kind of separation. It is a clean line and adds texture to the space, and potentially some warmth.

The Mayor stated that scoring patterns matter. He continued that it cannot be a flat concrete. It needs scoring and a brush finish. You can alternate that in 90-degree directions because panels will not go in sequentially. The grit and catch for people who are walking on an icy surface is important.

Mr. Fulton stated that there is the option of a base bid and alternate bid items, where you look at those prices for enhanced sidewalks, and then when you get all the prices in, you add things up and figure out where your budget can maybe add some of those bid alternatives for higher grades aesthetically. They could talk about what they want, and what they want but do not know if they can afford and have the contractor price those out and see what happens.

Chair Greenwald asked the Committee members to choose an option. Councilor Tobin, Councilor Workman, and Chair Greenwald chose option 2. Councilor Filiault chose option 1. Councilor Favolise chose option 1. Chair Greenwald stated that the Committee recommends option 2 for the sidewalk surface and noted the Councilors' objections.

Bike Lanes

Mr. Roberge stated that there are two bike path options. He continued that option 1 is maintaining the concrete surface. It is already part of the sidewalk regime. Photos in the PowerPoint show examples of painted/colored concrete. Option 2 is bituminous. On the concrete panel, control joints and expansion joints would be present. On the bituminous side, it can be continuous. Bituminous could be unpainted or painted. They would have bike symbols, and crosswalks that are crossing that within the walking paths, so you would see that striping with either (option). Of the two, Public Works preferred option 1, concrete.

Mr. Lussier stated that to clarify, Public Works recommends the concrete with the integral pigment, not the paint. He does not love the USDOT-approved neon green color. The integral color is a little more subdued but still gets the point across that this is a space reserved for bicyclists. In addition, having integral pigment would mean not having to re-paint it every year, which would be very expensive.

Chair Greenwald stated that he is not in favor of that green color. He continued that he does not see why it could not be a red/brick color, perhaps even with stamping, to be more cohesive with the downtown.

Councilor Workman asked if it is correct that the integral concrete color is mixed into the concrete directly. Mr. Lussier replied yes.

Councilor Favolise stated that he thought they agreed at the workshop about preferring the dyed concrete. He continued that the green color makes sense to him, as it is the City's color/logo.

Chair Greenwald stated that he agrees that the conclusion was dyed concrete, not just painted on.

Councilor Tobin stated that she supports integral concrete.

Chair Greenwald stated that it sounds like the Committee prefers option 1 for the bike path surface. He continued that he would request something more brick-like, stamped. He asked if the other Committee members agree. Councilor Filiault replied that he just wants it simple. Chair Greenwald replied that he does not care whether it is stamped, but he thinks the stamp would be a minimal cost increase and would be aesthetically stronger.

Raised Crosswalks

Mr. Roberge stated that these are the crosswalk tables at Gilbo Ave. and Railroad St., one at the top of Central Square, one on the Washington St. approach, and one on the Court St. approach. Mr.

Corning added crosswalks would also be on the side streets. Mr. Roberge continued that there are three ways of treating these. They want to make sure pedestrians cross along the curb plane. They are prioritizing pedestrians throughout the corridor. Option 1 is a concrete option. The concrete includes the ramp up, the table surface itself, and a ramp down. Option 2 is bituminous, very similar in configuration, just built on the bituminous roadway. Option 3 is unit pavers. Bituminous would be more cost effective than concrete, but concrete would be more cost effective than the unit pavers. He knows there is some history with the unit pavers and how they are built, but because they are segmented block and they are pieces, they would be a little more intensive to maintain than concrete or bituminous. A photo of Main St. crosswalks now shows a resin-based epoxy infill material that is stenciled. The orange-y brick color pattern is a stencil. It would be milled out of the bituminous pavement, placed very similar to what they have today. Stantec's drawings show a standard crosswalk with a "piano key"/ladder-type of crosswalk. This is more of a solid infill, which would be this brick pattern or any pattern that the design detail might come up with. Colored is a solid color, so having that is a matter of preference. The photos for option 1 show a ladder-type crosswalk, and option 2 shows a solid, infill color. Stantec's thoughts are that the Main St. crosswalks would be built in this (option 2) fashion, and the side street crosswalks could be the ladder type. They can focus on the material type, and then if the Committee wants, they can talk about the type of crosswalk striping as well.

Mr. Roberge stated that Public Works opted for options 1 and 2 for the surfaces of the raised crosswalks. He continued that from the perspective of the main line streets, that would be concrete on the raised tables, and the side streets would be bituminous.

Mr. Lussier replied that Mr. Roberge is correct; staff recommends asphalt on the side streets because Public Works staff are able to maintain those and fix the asphalt. For the crosswalk between Gilbo Ave. and Railroad Plaza, that raised intersection, and the crosswalks at Central Square, he thinks it makes sense to have something a little more robust and more aesthetically impressive. That is where they would suggest stamped concrete or patterned concrete. He does not recommend the unit pavers. Those were problematic downtown. Regarding the pattern itself, the City has gone through many crosswalk marking methods in the downtown, such as the hexagons, the current pattern, and regular painted crosswalks. He thinks the current system is a nice compromise. It is a little more aesthetically pleasing, but it can be repaired simply. For example, they can just fix the wheel tracks that get rutted out and worn through by the snow tires, without having to redo everything, and it is more durable than the unit pavers.

Chair Greenwald asked if the Committee members are good with staff's recommended options 1 and 2 for the surfaces of the raised crosswalks. The Committee members replied yes. Councilor Tobin stated that she does feel good about that option. She continued that in terms of the markings, sometimes the wide lines get worn out, making it hard to tell that there is a crosswalk, so she would want to explore that at some point.

Site Furnishings

Mr. Roberge stated that site furnishings include bike racks and trash and recycling receptacles. He continued that for the bike rack options, they looked at the U-shaped bike racks, similar to what the City has now. In the PowerPoint slide, he showed a photo of ones that could be permanently mounted on a concrete pad. He continued that a little more flexible would be the locations like the triple U-shaped bike rack that could be portable, for the City to move around to different locations. Bike racks could be with or without the City logo.

Mr. Corning stated that for trash and recycling options, (option 1) is essentially what exists today, separate bins for trash and recycling. (Option 3) is a combination. (Option 2) are more

contemporary versions of separate trash and recycling bins. Another option are mini-compactors, which reduces the amount of time you need to empty them, but they are more expensive. The important thing is splitting trash and recycling and having multiple fixtures there to encourage that.

Mr. Roberge stated that for bike racks, again, option 1 is either a permanent or movable U-rack, and option 2 is a U-rack with customized signage. For trash and recycling, option 1 is the “tree top” products like what the City has today. Option 2 is to have separate trash and recycling bins that look more modern. Option 3 is the “big belly” (compactor).

Chair Greenwald stated that he likes the signage, and he wants to look into whether that could be a fundraiser, with local businesses, the Kiwanis Club, the Rotary Club, or similar groups buying a bike rack. He continued that it could have the City logo on it along with “Gift of [business or group name].” That would need to be priced out and it is not an urgent decision.

Councilor Workman stated that in the photo it looks like a bar with the stamp, which could probably be added on at a later date. Mr. Roberge replied yes, it could be added at any time. He continued that Stantec suggests that if that is the plan, the City should buy the unit with the sidebar so they can convert it some other time. It is not a large cost. He does not think the signage is a “budget buster,” but the option for donations or sponsorships is a good idea.

Chair Greenwald asked what the Committee thinks about permanently fixed or portable bike racks.

Councilor Favolise stated that he thinks movable would make the most sense. Councilor Workman agreed. Councilor Filiault stated that movable makes more sense, because if the racks are not being used in a particular location, they could easily move them. They could also be moved if maintenance needs to be done around them. Councilor Tobin stated that she prefers permanent, because sometimes portable ones end up getting tossed in a corner, twisted, or not positioned clearly, but she does not have a strong preference. Chair Greenwald stated that he prefers movable.

Mr. Lussier stated that they might be able to compromise. He continued that some bike rack locations are permanent and do not impede winter maintenance. Those could be permanently installed. Others could be movable.

The Mayor stated that the bike racks that look like a hoop have a space for a bike on either side. He continued that he is surprised there is not an option for something more continuous with more lanes, like where you slide your bike into the lane. He has seen those in other cities with heavy bike use. He sees that design more often. Chair Greenwald replied that he thinks the Mayor is referring to those bikes for rent in big cities, which are slotted.

Councilor Haas stated that the Bicycle Pedestrian Path Advisory Committee (BPPAC) did a study of bike rack types and arrangements. He asked if that reached Stantec for their review. The types of bike racks presented are good, but there is a wide variety of others. Perhaps if Stantec has not seen the BPPAC’s recommendation, they should hold off on this item. Mr. Roberge replied that Stantec did not see that recommendation or report, and it would be great to look at. Chair Greenwald asked if the Committee would object to holding off on the bike rack decision until they heard from the Bicycle Pedestrian Path Advisory Committee. No objection was noted.

Trash and Recycling

Chair Greenwald asked what the Committee thinks about the trash can options.

Councilor Tobin asked if compost bins are a consideration now or in the future. She continued that

she notices many downtown businesses have shifted to compostable trash and materials. Chair Greenwald replied that he does not know what that would be. He continued probably a third bin next to the waste and recycling.

Mr. Lussier replied yes, if that became a thing, it would probably be a third bin. He continued that Public Works's recommendation for the "big bellies" is utilitarian. The compactors allow staff to empty the bins once a week, whereas standard bins need to be emptied two or three times a week.

Chair Greenwald asked if they would consider the standard trash bins as well as the compactors. Mr. Lussier replied that that is what they are looking for the Committee to consider. Staff suggests the Committee choose one or the other. Right now, there are compactors in two locations. Chair Greenwald asked if they want to have them all the same for consistency. Mr. Lussier replied yes.

Councilor Favolise stated that the efficiency of staff is a compelling argument. He continued that what he struggles with is that the compactors do not look very historic downtown. He leans toward option 1 and would be okay with option 2. Option 3 looks too modern.

Councilor Workman stated that she leans toward option 3, for durability, not being tipped over, better containing the trash, and reducing the likelihood of animals getting in it.

Chair Greenwald asked what the cost difference is between options 1 and 3. Mr. Roberge replied that options 1 and 2 are comparable, and he would call it "one dollar sign." He continued that option 3 would be "three and a half dollar signs."

The City Manager stated that with option 1 receptacles, the City does not get great recycling compliance. She continued that they get better compliance with option 3.

Chair Greenwald asked if option 3 requires wiring. Mr. Roberge replied that it is solar-powered. Chair Greenwald stated that obviously, option 1 would not break down, as it is not mechanical.

Councilor Filiault stated that he favors option 1, for reasons of cost and simplicity. He continued that compactors come with increased cost and the need for maintenance repairs, which basic trashcans do not have. If option 3 is three times as expensive, they could instead get three times more of option 1 trashcans for downtown. They need to be careful with costs. Option 1 works and costs less.

Chair Greenwald stated that they can take option 2 out of the discussion, as no one said anything good about it. Councilor Favolise stated that he prefers option 1. Councilor Workman stated that option 3 is her first choice, and option 1 is her second choice. Councilor Tobin stated that she is okay with option 1. The Chair noted his preference for option 1.

Chair Greenwald stated that he would request the City's logo on the side of the bins. Mr. Roberge replied that there is an option for a small logo. He continued that that is something they can look at later.

Hydrants

Mr. Roberge showed the options for hydrants. He continued that this is a new, modern hydrant. It is just a replica of older hydrants. Stantec talked with the Heritage Commission about this, and they liked the old "throwback" hydrant. There are four different painting schemes, and there could be more. Option 1 is solid red. Option 2 is a red body with a white "bonnet"/cover and white

valves. Option 3 is all yellow. Option 4 is essentially the existing hydrant, with a blue bonnet. Blue represents the line pressure delivering the water. Blue is an indicator to the Fire Department that it is the extra high-pressure system. If it were a low-pressure system, it would be treated differently.

Mr. Lussier stated that Public Works' recommendation is to stick with the standard hydrants. He continued that if the preference is for them to blend more, they could paint the bodies black instead of the silver/gray color that is shown. The bonnet should be color-coded to the available flow for the Fire Department to know what is available there. Chair Greenwald replied that the hydrants used to be black.

Councilor Filiault stated that he agrees with Mr. Lussier. Chair Greenwald stated that it looks like the Committee prefers option 4 for the hydrant style. He continued that it would mean standard parts for repairs. Mr. Lussier replied yes, that is why staff wants to stick with the standard hydrants, instead of having another system they would have to stock parts for.

Planter Curbs

Mr. Corning stated that for north of Railroad and Gilbo on the northern end of Main St. and at the perimeter of Central Square, they propose planters for the new proposed trees. He continued that for planter materials, option 1 is a vertical granite curb, a six-inch reveal. Instead of street curb, it would be a finished granite with a thermal finish on all exposed spaces. It is a dimensional granite, more finished and with finer looking detail than the street curb or other materials. Regarding option 2, there are locations with granite benches at the end of the planters. They suggest the opportunity to include a small, short fence mounted on top of the curb. It gives it a more finished look and prevents people from cutting through, prevents pets from going into the planter areas, and gives a nice-looking detail. That could have two or three sides. Public Works prefers option 2.

Councilor Favolise stated that he does not have a strong preference. He continued that he is interested in what the railing would look like. The one in the picture looks modern and might not blend with the rest of downtown. He is more interested in the planters' contents.

Mr. Lussier stated that Public Works' recommendation is utilitarian. He continued that the beds tend to get shabby-looking if people cut through them and dogs are using them inappropriately. Public Works' recommendation for the fencing is to keep the beds looking better, a little less trafficked. They could find a wrought iron fence detail that would be appropriate for the downtown.

Chair Greenwald replied that that would be good. He asked if it is correct that the fence would be mounted into the granite. Mr. Corning replied yes.

Councilor Filiault asked about costs. Mr. Lussier replied that the fence would cost more than option 1. Councilor Filiault asked how much more. Mr. Roberge replied that to use his previous analogy, the fence would be "about 1.5 dollar signs." He continued that it depends on how ornamental they want to get. There are fences that look more historic than modern. Materials, such as wrought iron or aluminum, vary in cost.

Mr. Corning stated that he thinks that is about right. He continued that the Committee should remember that this is only for the north end of Main St. and some of the planters around the Central Square perimeter.

Vicky Morton of 275 Water Street asked what the liability is for tripping hazards. Amanda Palmeira, the Assistant City Attorney, replied that the City has immunity protections for many of these things. She continued that the City has "discretionary function immunity" for how they do designs for

pedestrian traffic like this, so she does not think that needs to be a factor with this choice.

Chuck Redfern of 9 Colby St. stated that he thinks the fences could be a safety hazard, if someone brushes up against them and falls, or if a wheelchair gets stuck in them. He continued that the sidewalks get busy, especially with the addition of bike lanes. He is not worried about whether the City has insurance to cover the injured; he is more concerned with prevention. He likes the lower profile of the others, which people are less likely to stumble over.

Chair Greenwald stated that these are raised, as opposed to the existing condition, which he thinks is semi-raised. Mr. Corning replied that the existing is raised as well. It would be about the same.

The Mayor stated that his concern would be skateboards. He continued that anything that raises up, or anything that a skateboard could jump to or use in any manner, will be used. Chair Greenwald asked if he is saying it would be better or worse to have (the fence). The Mayor replied worse, as it chips. Chair Greenwald asked if skateboarders would ride along the fence. The Mayor replied not the fence, but those concrete pieces shown at the end invites someone to try it. He continued that looking at the County steps and KSC steps, you can see it happens. He thinks what exists downtown has worked well.

Councilor Filiault stated that he prefers option 1, to keep it simple. He continued that there is no need to complicate it. Regarding tripping, that can happen at any street downtown, at any time. They cannot prevent everything. Regarding costs and efficiency, the Mayor makes a good point. He thinks the rails would get broken.

Chair Greenwald, Councilor Tobin, Councilor Favolise, and Councilor Workman all chose option 1 for the planters as well.

Tree Wells

Mr. Corning stated that generally north of Railroad and Gilbo, the street trees are in planters, but due to the reduced sidewalk width as you get to Gilbo and Railroad south on Main St., the trees are flush with grade. Currently, there are some tree grates in various locations. Other locations have just a mulch or planting bed. A big issue for the health of street trees in urban environments is compaction. A tree with a mulch bed is very susceptible to compaction, which is bad for the roots and growth. Stantec recommends a treatment over that that is not just an open tree pit. (Option 1) is a tree grate like what exists now. He should also mention that where there is a flush condition, Stantec proposes the Silva Sell system, which is almost like a milk crate system that is below grade that accommodates soil growth for root volume growth and supports the pavement above it. (Option 2) would be a "paver grate," which is a tree grate below the level of the pavers, with permeable pavers on top of that. It would allow drainage to percolate through, with nicer detail than a regular tree grate. (Option 3) would be a new system they have been using a lot, called "porous resin bound paving." It is similar to poured-in-place playground surfacing but a little denser. It is a plastic bound together with resin, flexible and porous. Public Works recommends matching the existing tree grates.

Councilor Tobin asked if other things will be planted with the trees. Mr. Corning replied where the trees are flush, no. Mr. Lussier stated that they are talking about instances where trees are planted by themselves. Councilor Tobin stated that she is good with option 1 that would match the existing tree wells. Councilor Workman, Chair Greenwald, Councilor Favolise, and Councilor Filiault agreed.

Ornamental Traffic Signal Bases

Mr. Roberge stated that Stantec talked about this with the Heritage Commission. He continued that they are looking at modernized traffic signals, and mast arms are needed to cover the lanes as required. There are options for signal post bases. Option 1 is a "Washington base," very similar to the current lighting fixtures. This traffic signal base would be larger and bulkier than the streetlights, though. (Option 2) is a different type that would fit in, but with a slightly different focus. If it did not have a base cover similar to this, the traffic signals would look like they do now, a steel post that terminates at a straight concrete base. Public Works was neutral on this, so it is up to the Committee's preference.

Chair Greenwald asked if it is correct that what exists now is option 1, as they are not talking about the poles, just the base. Mr. Roberge replied that the picture shows the difference between a straight pole and a fluted pole, which have the little indentations. He continued that the street lighting systems now, not the traffic signals, are very similar to this Washington base, and the posts are fluted. That is what was selected already, in the previous action. The Washington base with the fluted post would be closest to what the street lighting is.

Chair Greenwald stated that he chooses that.

Councilor Filiault asked what the cost difference is between the two. Mr. Roberge replied that there is not much of a cost difference. Mr. Lussier stated that there is no maintenance or durability difference; it is purely about aesthetics.

Councilor Tobin stated that she definitely prefers option 1. Chair Greenwald, Councilor Workman, and Councilor Filiault agreed. Councilor Favolise stated that he prefers option 2 but does not feel strongly.

Lighting - Electrical Pedestals and Bollard Lights

Mr. Roberge stated that additional site furnishings to consider are the electrical pedestals. He continued that they are the power posts that provide downtown power. Option 1 would be a singular receptacle. Option 2 is a dual or more. (Option 1)'s size is narrow and sleek. (Option 2) would double the size, but it has more functionality.

Mr. Roberge stated that bollard lights will add better visibility at the raised crosswalks, here and at Railroad Square and the entrance to Gilbo. He continued that they need safety bollards to prevent vehicle access. The Heritage Commission encouraged them to find something that looked more historic and that would be compatible with the lights. Stantec has not found one that would match the lighting fixture base particularly, but they have three bollard options they ask the Committee to consider.

Chair Greenwald stated that he would rather see two receptacles than extension cords, splitters, and what goes on during the events. He is not interested in the USB option; it does not really fit with downtown festivals. He noted that the other Committee members say option "2" as well.

Chair Greenwald asked the Committee about bollard lights. Councilor Workman replied that she thinks option 3 would match with the light posts a little better. She thinks they have ridged signal lights right now, so option 3 would match better, aesthetically.

Mr. Corning stated that with option 3, the whole center section is illuminated, not the top.

Chair Greenwald stated that he likes option 2.

Councilor Filiault stated that since they are on the subject of bollard lights, the MSFI Committee has talked about having temporary bollards that could be used during downtown events, such as at Washington St. and Court St. Many communities use them, including Buffalo, NY, so he does not want to hear that Keene cannot use them because of the snow. They are portable, for events, and screw into the ground. He would prefer this method for events, because currently, the City uses multi-million dollar trucks as blockades. That is cost inefficient, and it takes manpower to get all those trucks downtown, and Public Works charges for those. Removable bollards would be more cost efficient. That is probably not something Stantec or Public Works has information about tonight, but he would like to look into that.

Mr. Lussier replied that he is right that they do not have that information tonight. He continued that they heard that request, and they are evaluating different options. He has not yet found one he loves, but they know the Committee is interested in this. Regarding downtown events, to set the record clear, Public Works charges event organizers whatever it costs to have Public Works staff come in and move the equipment. Public Works does not make any money off that. He would be fine with not having as much effort to staff those events.

Mr. Roberge asked if the Committee selected option 2 for the bollards. Chair Greenwald replied yes.

Gilbo Ave. and Railroad St.

Mr. Roberge stated that the Committee has finished the Main St. list, and now they move on to Gilbo Ave. and Railroad St. They will not repeat the elements they have already gone through. Two features are unique to the Gilbo Ave. area. First is the canopy lighting. In the design, it was important to activate and light up this area between the buildings along the Cheshire Rail Trail. That catenary lighting is shown in two styles of lighting fixtures Stantec felt would be appropriate and maintainable. They are shown connected to buildings, which would be subject to conversations with the building owners. Stantec wants the Committee's opinion on the style of lighting fixtures. Options 1 and 2 are both industrial looking and would match fairly well with the theme of the old rail corridor.

Mr. Roberge continued that the other unique feature for the area is the "leaning benches," which would be in and around the larger gathering space. They allow people to do some work while standing. Sometimes they are energized with receptacles. Option 2 is an angled leaning bench, which allows people to put a bag down while they are waiting or meeting people.

Regarding the catenary lighting, Chair Greenwald stated that the example photo just has bare bulbs, which he thinks look good, too. He continued that it would be interesting to see this (catenary lighting) on Lamson St., Church St., and other alleys.

Councilor Filiault stated that he likes the bare bulbs. He continued that they have a rustic look, but more than that, many of the alleys are very dark at night. Especially in the downtown area, people feel safer with light. This is good for Gilbo Ave., and he thinks down the road, they should consider some of the other alleyways.

Mr. Lussier stated that the recommendation for option 2 is based on the degree of protection for the bulb. He continued that the bare bulb has no protection, whereas option 1 offers a little bit of bulb protection, and option 3 adds a little more with the cage underneath. That protection is his only preference. In terms of aesthetics, he thinks they all look nice.

Chair Greenwald stated that he is thinking of the cost of the fixtures, but he also has to shift his mindset, because this is not his property. This is a multi-million-dollar project; they are not talking about a string of Christmas lights here.

Councilor Workman asked if a canopy could be added later on, if they went with the bare bulb.

Mr. Roberge replied that this might be one of those areas like what Mr. Fulton mentioned before about alternate adds. He continued that this might be something they want pricing on. Regarding Councilor Workman's question of whether they could go with bare bulbs and fit the canopy onto it later, the answer is no, they would have to replace the whole system.

Chair Greenwald stated that he thinks the add alternate bid is a good idea. Mr. Roberge replied that a number of these items would work well.

Councilor Favolise stated that he does not hate the idea of bare bulbs. He continued that he understands the degree of protection piece, but he is also thinking that they should be controlling costs as best they can and keeping things simple for the "non-essential" pieces, and this falls into that category for him.

Chair Greenwald stated that they do not need to have this lighting at all. However, he thinks it is a spectacular add to the project for not too big of an expense.

Councilor Tobin stated that she likes the bare bulbs. She continued that if she were to pick one of the options presented, she would pick option 2, because there is a drinking fountain that was modeled after an old fire call tower, and this reminds her of that.

The Mayor stated that he encourages limiting the add alternates, because having too many can drive bidders crazy. He continued that that said, this is a good one for an add alternate, because you could ask for unit pricing. Given the Committee's desire to see this lighting down multiple alleyways, unit pricing would be a good add alternate.

Mr. Fulton stated that when it is 3:00 in the morning and people are coming out of bars, "anything lit is a fair shot." He continued that once one light goes out, another gets smashed. Public Works will not replace the light every time one goes out; it will be a while. They will get complaints about the lights being out. Thus, his recommendation is "protect, protect, protect." In addition, the bollards are a great opportunity for someone to kick down or hit with a bat. He knows Public Works always looks at future maintenance and makes things rugged so they last, preventing what vandalism they can.

Chair Greenwald asked if it is correct that if they do the fixtures, there would be many fewer fixtures than bulbs shown. Mr. Corning replied yes, and the other big difference is that the fixtures in options 1 and 2 are cable supported. The cable is supported at the building faces or on poles, then the lights and supporting electrical hangs off that. The bare bulb lights are just on a string, with no cable support.

Chair Greenwald asked if it is three fixtures across. Mr. Roberge replied that he thinks they would see a frequency of more than three. He continued that the strand is separated by 12 or 15 inches. They might not have the 10 bulbs they have here, but there would be about seven or eight. There would be a decent span across, to get the lighting effect they want.

Councilor Favolise stated that if it is between option 1 and 2, he likes option 2, for the protection piece. He continued that the cage does feel less modern than the top one. He does not hate the idea of just the bare bulbs. He appreciates the comment about the safety of them and the

vandalism. He is not necessarily concerned about this area being vandalized, compared to some other areas. He likes option 2 better than option 1 but would be fine with bare bulbs.

Councilor Workman stated that she feels the same as Councilor Favolise.

Chair Greenwald stated that he is looking at the bare bulbs as lasting three to five years. He continued that it would not be a permanent arrangement. He is in favor of the bare bulbs. Councilor Filiault stated that he too prefers the bare bulbs, and they could buy an extra case of bulbs. Councilor Tobin stated that she likes option 2. The Chair noted the consensus is bare bulbs (with a cage as a bid alternative for the canopy lighting).

Leaning Rail

Councilor Favolise stated that he wants to hear some discussion about the leaning rails, because he questions whether this needs to be part of the project.

Mr. Corning stated that Stantec proposed these leaning rails in the Gilbo Ave. area and Railroad Square. He continued that it is a newer type of feature they have been using in many urban projects, and they are very popular and well used. That is why they propose it, to activate and give some different uses for the different public spaces.

Chair Greenwald replied that he has never seen it anywhere, but clearly, Stantec has. He continued that it would probably answer the question of people hanging out on the bench all day, as this is not comfortable to sit on for that long. He would be okay with losing it.

Councilor Tobin stated that she likes option 1. She continued that she can picture herself using that, gathering around and talking to people around it. She can imagine it as a little gathering place to have a drink, coffee, or ice cream

Councilor Filiault stated that he does not support the leaning rail. He continued that constituents tell them to get the project done without wasting money. He thinks this is a waste of money.

Ian Matheson stated that this seems like a great conversation point, as Councilor Tobin mentioned. He continued that maybe this could be something the public fundraises for. He does not think it should be outright dismissed. They want people to congregate downtown, and this is a great congregation point. There has to be some way for people to stop and rest and talk.

Councilor Workman stated that she would not want to eliminate any seating on Gilbo Ave. She continued that if they are not going to have the leaning rail, she still would want some benches periodically. She would be okay with setting aside the leaning rails for now and seeing where they are in the future. She thinks they could be added at any time.

Councilor Tobin stated that she would like option 1.

Councilor Filiault and Chair Greenwald stated that they do not want any leaning rails at the present time and they could be added to the designs in the future.

Railroad Square

Mr. Roberge stated that they are talking about Railroad Square now, not repeating any of the items already talked about. They are focused now on the paving areas. They have talked about sidewalks

and unit pavers, and now they want to talk about archways, the shade structure, and some benches.

Surface Options

Mr. Corning stated that it is the same palette of choices as with Main St. He continued that he thinks Public Works is a little more supportive of unit paving as an accent element in Railroad Square. Option 1 is standard concrete, broom finish or exposed aggregate. Option 2 would be a combination of stamped concrete and standard concrete. Option 3 would be introducing unit pavers as an accent in specific areas to designate different zones within the Square.

Mr. Corning continued that one feature they propose, which seems to have some momentum and buy-in from the community, is representing the historic railroad in the pavement. Option 1 would be to use real rails, getting surplus rails from the State or another source, and incorporating them into the paving. The pavement would come up flush with the top, representing real rails and the historic situation in that area. Option 2 would be to use a Corten steel, which rusts naturally. It would just be a steel plate. It would be the thickness of a rail, if you were looking at it from the top, but it would not be the full depth, just a half inch or three-quarter inch plate that would represent the rails. Option 3 is a more interpretative idea where the rail could be represented in the paving, and you could potentially have some interpretative elements associated with that. Option 4 is using pavers. A paving pattern would represent, conceptually, a rail going through the zone.

Mr. Corning stated that Public Works supports some combination of option 1 and option 3.

Chair Greenwald asked what the problem with option 2 was. Mr. Lussier replied that selective use of the pavers could really make the space distinctive. He continued that it would be a different feeling, a little more polished. He definitely does not want to have the unit pavers throughout the downtown, for reasons of maintainability, but using them selectively here or in the middle of Central Square can really highlight the significance of those spaces.

Councilor Filiault stated that unit pavers should not be used in high traffic areas. He continued that Railroad Square has had pavers. Especially in the winter with the frost and the water, those pavers come up and go down. In the past they have been a nightmare on Railroad Square. The area freezes and thaws and then becomes slippery. Pavers look good, but historically, they have not held up very well.

Mr. Lussier replied that there are ways of building them with different bases to make them more durable. He continued that they do require more maintenance, no question, which is why he is not advocating for using them throughout, but they are very attractive and could make these spaces look very nice.

Councilor Tobin stated that one of the Councilors said the bricks in this area are something that would be missed, so she would like a way to incorporate something like that.

Councilor Favolise stated that he really does not like the unit pavers. He continued that he understands this would be a more limited use and there are ways to do it, but he sees them as a trip hazard and a maintenance challenge. He is happier with a more limited use in a thoughtful way, but he agrees with Councilor Filiault's points. Whatever they decide, it needs to be concrete forward, with little to no use of pavers.

Councilor Workman stated that she likes option 1 with the concrete, no unit pavers.

Chair Greenwald stated that he likes option 2. He continued that he does not want to see a vast

expanse of concrete. Having a mix of stamped and standard means they could have the aesthetics of the unit pavers and still have some variety out there.

Councilor Filiault replied that he agrees with Chair Greenwald that it cannot just be barren concrete, but he disagrees with the pavers. He continued that some colored, stamped concrete for visuals would be good. He agrees with option 2.

Councilor Workman replied that she could go with option 2 as well.

Councilor Tobin stated that she could live with option 2 but she is voting for option 3. The overall consensus of the Committee was option 2 for the Railroad Square surface option.

Chair Greenwald stated that regarding the railroad tracks, he is in favor of real rail.

Councilor Favolise replied that that was his thought, too. He continued that he likes all of the options better than the painting. He continued that his question is the cost. At some point, there was conversation about trying to get the actual, historical rail. To Councilor Tobin's point about the historic nature of this, he feels the sense from the community that they want to preserve the history of Railroad Square.

Mr. Roberge replied that they could try to find used, surplus steel rail, and the cost could be very nominal. He continued that it could be donated. Their partners at DOT Railroad might have enough surplus material that they could donate to the cause. It might be cost neutral. The Corten weathering steel, option 2, would have some cost to it. If they are embedding it in concrete and stamping concrete around that, from a square foot standpoint, it might be a nominal cost as well. Options 3 and 4 can still be accomplished with stamping, with different coloration and material type. If they are looking at option 2, which is concrete and concrete stamping, they are probably comparable, with maybe a slight upcharge on the steel side.

Councilor Filiault stated that he likes the option of real rail. He continued that it is good to have friends with surplus materials.

The Mayor stated that he would refer them to the Heritage Commission's comments. He continued that the rails were a suggestion of that group. That would be a good follow through.

Councilor Tobin stated that a concern she has is that in the picture with the ridges it looks like there would be a groove. She asked if that would be finished. She wonders if a wheelchair could get caught in there. Mr. Corning replied that the rails would have a solid top.

Mr. Lussier stated that his initial recommendation for the Corten steel was based on the concern he had about detailing the interface between brick pavers and the rail. He continued that Stantec has assured him they could make that work. If the preference will be for the use of concrete and stamped concrete, using that with steel rail would be simple.

Gateway Arches

Mr. Roberge stated that there are a number of options in here. He continued that the two images on the lower right are precedent images of what is nearby in the community. KSC has large brick and granite pillars, very stately with an archway of steel frame and steel text letters. Ashuelot River Park is very similar, with large granite posts with a standing arch.

Mr. Roberge continued that option 1 is a single post with a brick base. When they had the

conversation with the Heritage Commission,, the notion of recycling the bricks that are in Railroad Square now for these bases was really important. This size, or something broader. What is at KSC could be an option. There are a number of options here, but pinning down one of these options would be helpful for Stantec. Option 2 is a brick base, two posts, and a steel arch with steel, raised letters. It could be cut letters in a metal panel, or the steel frame with metal letters that are independent. Option 3 (1A) is single post with granite base. Utilizing the brick to the best extent possible, this really was a good option. They focused on the gateway arch at Railroad Square, but there is also space for one at the archway into Gilbo and the Cheshire Rail Trail if the Committee is inclined to consider that.

Mr. Roberge stated that the Public Works Department was all on board with multiple options here, but what was most important was the brick base. Mr. Lussier stated that the preference here is based on the conversation with the Heritage Commission. He continued that he learned from the Commission that the pavers at Railroad Square were originally donated. It would be really nice to recycle some of those.

Councilor Filiault stated that he likes what he is hearing about donations. He continued that he has no problem with either one. Keene started on Railroad Square when the trains started coming through. He appreciates that they are bringing back Railroad Square. He realizes it will cost some money, which he might normally say no to, but he thinks it is important to preserve the history.

Chair Greenwald stated that he likes the single post. He continued that regarding being potentially hit with a snowplow, granite holds up a little better than bricks. He should not be concerned.

Councilor Favolise stated that he likes the single posts. He continued that he does not see the need for it to be as high as the KSC or ARP ones. It is a way to maintain the aesthetic throughout the City but recognize that this is a different area. He agrees with Councilor Filiault that this is an area he is okay with investing in, due to its historical nature. He likes option 1. He likes the historical tie. The Gilbo Ave. arch feels like a nice thing to have down the road but it does not have to be included here.

Councilor Workman stated that she likes option 1 as pictured with the banner and the cutout letters.

Councilor Tobin stated that she would be okay with that.

The Mayor stated that he recalls,(with the entryway at KSC, which was then modeled at Ashuelot River Park, that it is very important to have the solid letters, for photography. He continued that the perforated letters will not show up. He would like a design that emphasizes the lettering as opposed to the banner.

The consensus of the Committee was option 2 for the gateway arches. City Manager asked if they would be opposed to the Gilbo Ave. arch as a bid alternate. Chair Greenwald replied that he is not opposed to that.

Shade Structure

Mr. Corning stated that they propose a shade structure for Railroad Square. He continued that this came up in their conversations with the Heritage Commission. There has been discussion about what to contain under the structure, such as benches, bike racks, or both. All of the options for structures are premanufactured products.

Mr. Corning continued that option 1 is a trellis structure, giving dimpled shade. Option 2 is similar but the roof is louvered, potentially mechanical to close or open. Option 3 is a solid roof. They could

look at variations within the different options, such as different colors, but generally it is about the style and mostly the roof structure, whether it is open, closed, or somewhere in between.

Chair Greenwald asked what the function is. Mr. Roberge replied that this was added based on public comment about having shade opportunities in the park and a bit of covering for seating, benches, or bike racks. He continued that option 3 shows the covered pavilion that has bike racks. That could be a combination with some sort of seating block.

Chair Greenwald asked if it is correct that it is not a performance center. Mr. Roberge replied that is correct. Chair Greenwald stated that it would not have tables.

Councilor Favolise stated that he recalls conversations around constituent desire for a shaded resting spot. He continued that he is confused about option 1, which looks more decorative and like it would not meet that purpose. He is not opposed to having a shade structure, but he is opposed to option 1.

Councilor Workman stated that she would go with option 3, if she is remembering correctly about where they talked about having these.

Councilor Filiault stated that he sees these as decorative and does not see the need for them. He continued that he does not see them being efficient. He thinks they talked about shade structures in Railroad Square. A couple other businesses will be moving in there shortly. He could see the businesses there and the City coordinating together. They could have tables with big sun umbrellas, like Burlington and other cities. It creates a mood and shade and does not cost (as much). He does not see a need for any of the options presented here.

Mr. Redfern of 9 Colby St. stated that he is a member of the BPPAC. He continued that he thinks the BPPAC wanted option 3 because it provides some coverage for bikes that are getting increasingly expensive and require some degree of shelter. The heat and snow are considerations, too. Keene has many winter bicyclists. This shelter does not need to be very big.

Councilor Haas stated that Mr. Redfern is correct; the (BPPAC's) idea was to provide some coverage for bicycles to stay out of the weather.

Councilor Favolise stated that he might have been confused about the intent of this space. He continued that if the intent is coverage for bicycles, he needs more time to think about this.

Ian Matheson stated that options 1 and 2 are aesthetically pleasing, like something he might put in his backyard and string some lights on at Christmas time. He continued that option 3 is practical for everyday use. He would choose option 3 if he were to sit under one of these with a book or a laptop. It provides the most shade.

Councilor Filiault stated that if a particular group badly wants this, he suggests they donate the money for it or fundraise for it.

The City Manager stated that they have had to change to more of an option 1 or option 2 structure elsewhere in the City due to people who might camp there.

Mr. Matheson stated that he does not think that one group doing something problematic is a valid reason to outright dismiss something. He continued that he thinks option 3 is viable for the city and would provide a unique experience for visitors and those considering moving to Keene. Someone who works remotely could see the beautiful downtown and think of going downtown in the summer to work in the shade. It would be very aesthetically pleasing to folks coming into downtown.

Chair Greenwald stated that he is confused by option 3. He continued that if it is a solid roof over a bike rack, people will not be sitting there. The bike rack could be removed and it could just be a roof for people who want to be there for a long time. Options 1 and 2 are aesthetic. If there is a great desire for this after the project is built, this could be easily added. He chooses "none of the above."

Councilor Tobin asked if there was a discussion about having a shade structure in Railroad Square and then in Gilbo. She continued that she thinks they talked about how having one was a priority and maybe not having them in both places. Chair Greenwald replied that there was talk of "the big covered food truck thing."

The City Manager replied that the one in Gilbo Ave. is a solar structure, over parking. She continued that it provides all the power that will power the downtown. Mr. Lussier added that it is also much larger.

Chair Greenwald stated that as they are going through this, they are making choices. Once it gets to the City Council for a vote, a Councilor could amend the Committee decision however they want. This is merely the Committee's recommendations.

Mr. Bohannon asked Mr. Roberge to point out where the shade structure would be, in case the photos misled the fact that they might have been further up into Railroad Square. He continued that this will be placed in the back area by the bike racks. Mr. Roberge replied that is correct. He continued that the Cheshire Rail Trail enters into Railroad Square. They thought they should move it as far north as possible to separate the bike path, but really, this location could be a refuge for bikes. There could be benches. The question about a covered spot became important, toward the back. The value of Railroad Square is all of this open space. That allows you to be as flexible as possible. The shade structure would be located toward the back.

Councilor Workman stated that she is sticking with option 3. She continued that they need this there. The City Manager brought up a good point that they accommodated covered parking for vehicles, and she thinks this was a compromise to also be fair to the cyclists, offering some covering and protection. She wants to highlight that it is not just for cyclists' refuge. If you are walking on the bike path and it starts to pour rain, you can go under this shelter. Someone could make a quick phone call, out of the way and out of the rain or snow. She looks at it as a quick pit stop of sorts for people coming and going.

Councilor Favolise stated that he will go with option 3, contingent on it being some sort of mixed use that he did not see in the photo. He continued that it sounds like the community interest is a general shade spot, not just something for bike racks. He thinks they do need a shade structure but not just for bikes.

Chair Greenwald stated that he does not want this. He continued that he thinks it will become camping.

Councilor Filiault stated that he agrees.

Councilor Tobin stated that she chooses option 3. The consensus of the Committee is option 3 for shade structures.

Central Square

Mr. Roberge stated that now they move onto Central Square. He asked Mr. Corning to talk through

these last two items.

Mr. Corning stated that regarding the paving materials on Central Square, they propose the primary walkways would be standard concrete. He continued that for the perimeter path that they added when the green got expanded, they recommend stone dust. It is a softer material. It will not be as heavily used, and it makes it more “garden-like.” They think it would be a nice character for the secondary paths. For the center area where the fountain was, and which will be replaced, they suggest unit paving as an accent area to highlight that as a prominent area in the green of Central Square.

Mr. Roberge showed on the drawing where the unit pavers would be in the central gathering area where the water feature is. He continued that the main pathways that get you in and out of the center of the square would be concrete, and the perimeter paths could be stone dust.

Surface Treatments

Mr. Roberge stated that Public Works agrees with standard concrete and unit pavers for the center of the square.

Councilor Filiault stated that he agrees with Public Works on this one. He continued that regarding the stone dust, people in wheelchairs should have the same access to the space as anyone else. Stone dust looks nice but would not be efficient for anyone using a wheelchair or mobility device.

Councilor Workman stated that she is okay with the recommendations.

Councilor Favolise stated that he has repeatedly noted his opposition to unit pavers but will go with the Public Works’ recommendations.

Councilor Tobin stated that that she is fine with the recommendation.

Seating

Mr. Corning stated that all of these seating options would have interim arms to discourage people from sleeping. He continued that option 1 would be a metal bench. Option 2 would be similar to what exists today, a metal frame with wood slats. Option 3 would be the same but backless. There are a couple ideas for option 4, such as boulder seating, which they are incorporating in other parts of the project, or granite slab seating.

Mr. Roberge showed the current bench locations on the drawing. He continued that some of the seating would be around the water feature and along the perimeter of the central island area. Staff made a good note that the backless bench or the stone block allows you to sit facing the walkway, but if there is an event or music in the gazebo, you can turn around. You could use those seats on both sides.

Mr. Roberge stated that option 1 is a metal bench, option 2 is a wood slat bench, option 3 is a wood slat backless bench, and option 4 is stone blocks. Mr. Corning replied that the stone blocks are option 4A and option 4B, natural stone versus granite slab.

Chair Greenwald asked if the backless bench could be metal. Mr. Roberge replied yes. Chair

Greenwald replied that that would be more durable.

Councilor Workman stated that she likes option 3 for Central Square. She continued that it would look nicer. She prefers wood to metal.

Councilor Favolise stated that he likes option 2, as he does not like backless benches. He continued that he does appreciate that backless benches could be used on both sides. If it is option 3 he likes wood, but his first choice is option 2.

Councilor Filiault stated that he likes option 3. He continued that he thinks those work fine for Central Square. He thinks the concrete ones would be used by skateboarders, so although concrete looks good, they should not use it. He thinks backless works the best.

Councilor Tobin stated that she likes option 4A but she could go with option 2 as a second choice.

The Mayor stated that he would worry about skateboards on the flat surface of option 3. He continued that maybe metal with slats(would be okay. Chair Greenwald replied that there would be interim arms. Mr. Corning stated that if they went with option 3, it would be similar to the bottom photo on option 2, with the interim arms.

Chair Greenwald, Councilor Filiault, and Councilor Workman stated that they choose option 3 for seating. Councilor Tobin stated that she could be okay with that. Councilor Workman stated that she prefers wood. Chair Greenwald replied that he does not have a preference. Councilor Filiault replied that he is fine with either, as long as the wood is durable.

Chair Greenwald asked about the fountain in Central Square.

Mr. Roberge stated that one of the things that came out in the preliminary design was an alternative that would relocate the fountain to an edge, instead of having it centered. He continued that this would be for several reasons. One would be to maximize the ability to use the center spot for something else. They would reserve space for the peace pole, which could stand alone or with whatever else might come along. Relocation or replacement of the water feature is probably a longer design consideration with the community. Stantec knows many of the parts and pieces there, such as the granite slabs, were donated by another community. This water feature is still up in the air. They know what the dimension of the center circle will be, and that is fine, whether this project moves along with no change to the water feature, they will make sure that any electricity and water and sanitary sewer connection is made and updated. But they could also relocate that anew. He thinks it is a further design consideration for the community, maybe even outside of this project.

Chair Greenwald stated that he is glad he asked, because he did not expect that answer. He continued that he did not know they were considering moving the fountain. He does not agree with that. He thought he was just asking about the fountain itself and agrees that that is a whole design he is not aesthetically skilled enough to make.

Councilor Favolise stated that he echoes the reservations about not centering the central feature of Central Square, which is the fountain. Regarding the peace pole, a couple months ago, the MSFI Committee voted on a motion to direct the City Manager to work with the petitioners on incorporating any proposed peace pole into a new fountain design at some point in the future. He sees it as standalone. Committee members received many communications on this feature, from people on both sides of the peace pole issue. He expects people are paying careful attention to these slides. He asked if there is an update.

The City Manager replied that Councilor Favolise is right that this plan will probably create a question. She continued that Stantec is reserving the space because it is an unknown at this time. Mr. Bohannon has been working with the group that came forward for the peace pole, and they have been working on integrating elements into the fountain instead of creating a separate peace pole. They went out to bid for a project, and after that came back, they changed their minds and are now interested in a separate peace pole. That is the latest.

Mr. Bohannon replied that is correct. He continued that he advised that group to come back to the Committee related to that option of just the peace pole. There had been thought about possibly repurposing the granite that is in the fountain today with some peace wording, but it is back in that group's court to come before the Committee related to the obelisk and the peace pole.

Councilor Workman stated that her question has not been answered yet, regarding benches. She continued that she asked, if they do not do leaning rails on Gilbo Ave., if the benches that are currently there will stay in place. Mr. Lussier asked if she is talking about the ones that Public Works built. Councilor Workman replied on the rail trail. Mr. Lussier replied that Public Works built the benches there, and the idea would be that the styles the Council expresses preferences for would be used throughout. Benches on Gilbo Ave. would be replaced with what the (Council) shows a preference for.

Councilor Filiault stated that regarding the fountain, the Committee talked previously about how it would be something to get the community involved in. He continued that he still thinks they could put it out there. For example, the community took pride in its involvement with the Wall Dogs murals. There is time. They should give people the opportunity to submit fountain designs or ideas. The community would appreciate it.

Chair Greenwald asked if Councilor Tobin had thoughts to add. Councilor Tobin replied no.

Chair Greenwald stated that his input is: do not move the fountain.

Councilor Favolise stated that he thinks he heard Public Works say they would have the backless benches throughout the downtown. He continued that he is not sure that was the intent. Mr. Lussier replied that was the intent of the question. He asked if that is not what the Committee was thinking.

The City Manager asked if they could have flexibility to use different styles of benches in different areas. She continued that she agrees the backless benches make sense in the common so people can face either direction, but they might not make sense in other areas. Thus, they could carry the same theme with the wood and the middle frame but have some opportunity to mix it up a little. Chair Greenwald replied that sounds good. Councilor Filiault agreed.

Construction Staging, Mitigation Strategies, and the Overall Phasing

Mr. McNamara stated that he will briefly go over some of the construction staging, mitigation strategies, and the overall phasing. He continued that the planned phases have changed a little bit as the utilities have been refined, but in general, the plan is to start at the north end, the Central Square area, and work their way south. The graphic shows the construction phases – phase 1 in red; phase 2 in blue, extending up Gilbo Ave. and down Railroad a little; and phase 3 in green, at the south end of Main St. The graphic shows what will be impacted, the surface treatments, sidewalks, and roadways. The hatched areas show where the underground utility work will be, the ditches and trenches. This is what drives the overall size of the project.

Mr. McNamara continued that the contractor will not be working in the whole area at once. There

would be restrictions on the contractor. For example, if they are working on the Court St. side of Central Square, the other parts of Central Square would be left alone. Then as the work progresses around the square, the location where the work had happened would be opened up, as the work moves along to the next area.

Mr. McNamara continued that for parking, the contractor will do signage to direct people to alternative locations. The number of parking spaces allowed to be taken during any single stage of construction will be limited. They are thinking 25, because that gets the biggest individual block of parking spaces. Sidewalk work will be staged, built in sections, to maintain accessibility, maintain foot traffic, and maintain access to the buildings as work goes along. Some of that will be accomplished with temporary ramps and bridges that extend from finished concrete to finished concrete, over areas that are being prepped. There are access requirements for ADA accessibility to buildings. There will be a lot of signage during construction. The contractors will have to give detour signage for pedestrians and let people know that businesses are open. Building access will be a contractor requirement. They will work individually with buildings to give people advance notice of when the contractors will be working in front of their buildings, whether it is the sidewalk work, utility connection work, or other work, and maintain the ADA accessibility through the project area. Noise, dust, and vibrations are always a challenge on any transportation project. There will be exposed dirt. It will be monitored during construction. Many of the items are on the contractor as part of their mobilization cost. They can control it better if they have some bid items for dust control and vibration monitoring built into the contract. They can incentivize the contractor to keep up with it.

Mr. McNamara continued that the construction contract in general will have clear and enforceable guidelines and directions as to what the contractor has to maintain, and the parameters around how he will maintain it. The contractor will have to present a schedule, work plan, and traffic management plan, which will be reviewed by the City and the City Engineer. Those will need to be approved before construction starts. The construction contract will lay out clear guidance as to how many lanes of traffic the contractor can take, the parking spaces as mentioned, what needs to be restored outside of working hours, and what can be done during working hours with police and flaggers and temporary traffic control.

Mr. McNamara continued that the intent would be April to early December, which is the typical season. Late spring or early spring could vary a little bit. The work will be Monday to Friday, 7:00 AM to 5:00 PM, Saturdays and overnights only with permission. For City holidays and activities, they would have to shut down at noon on the day prior. Mr. Lussier will speak to adjustments to community events.

Mr. Lussier stated that he will talk about some of the things the City is doing to support businesses during the project. He continued that he wishes he could say this will be easy with no disruptions, but it will be a challenging project for everyone. Just as sure as he is that there will be challenges, he is sure that they can get through it. They have been talking all along about ways to help businesses get through this and make sure concerns are addressed. The number one thing they will be doing is the Project Ombudsman role. It will be a temporary, contract employee for the City. It will be someone outside of the construction team, not someone from the Engineer's Office or Stantec. Someone apart from the project can be an honest broker between the business community and the construction team. Their job is not so much to solve the problems, as it is to identify them, make sure they are responded to, and track them until they get resolved. They will attend project update meetings with the MSFI Committee, and weekly meetings with business owners. This person will visit and talk with business owners, see what challenges they are having, and come up with ways to make it better. They have written the job description. Some business owners have graciously volunteered their time to help the team hire someone. Once that is advertised in the next few weeks, they have to find the right fit. He encourages anyone who knows of potential candidates to make

sure they are aware of the position.

Mr. Lussier continued that he expects to be before the MSFI Committee monthly, talking about the project and updating everyone. Probably it would be him and/or the Project Ombudsman. Alternately, they will be hosting "Coffee and Hard Hats" meetings. The idea is to give folks an informal venue, maybe Central Square or the job site or in City Hall, where they can talk to the contractor, get updates, and voice any concerns they have.

Mr. Lussier continued that he was invited to visit with Hannah Grimes staff. A few weeks ago, they hosted a meeting for community event planners. They hold this annual event in an effort to get everyone together, coordinate schedules, and make sure people know when events are planned. They asked him to speak about how this project would affect their plans. He shared a draft alternative layout plan with them that engineering staff worked with the KPD to develop. When Central Square and that northern leg of Main St. is under construction during the first season, they will not be able to hold the food festival in Central Square. This alternative, in the slide, shows what they think is the maximum area the City could support as an event footprint next year. Not all community events need that much space; they would tailor it for each event. With the inclusion of Gilbo east and Commercial St. parking lots, in a cordoned off footprint, they can actually provide more area than any event that is currently happening in Central Square and on Main St. Pumpkin Fest, Food Festival, and those bigger events could still occur, in a different location. That said, it would take a significant portion of the event parking out of service. There would need to be significant communication and coordination with property owners about using their parking lot during events, and possibly using parking areas further out with shuttles to the events. Not every event will need all of that space. For example, an event might need Commercial St., but not Gilbo east. The point is that the City can support and continue any event that is currently happening in the downtown during construction.

Mr. Lussier continued that the City communicates for the project many different ways. The most formal are formal notifications, letters to property owners, which they have done in the past. For example, during the preliminary design phase when Stantec needed to get into every single building downtown, they sent formal letters to property owners and asked them to respond to schedule a meeting. They will do that again as other details need to be communicated. Those letters do not always get to tenants. They will do direct notifications for things like a planned utility outage. For example, if they have to replace a water main or valve, they will need to take a neighborhood off of water for a day, so the contractors are required to hang notices on every door three days in advance. That also allows them to reach the tenants, not just the property owners.

Mr. Lussier continued that regarding social and broadcast media, Public Works does a weekly interview with Dan Mitchell on the radio. Those are used more for, say, advertising that there will be changes to traffic patterns or more urgent announcements if an unexpected event happens and they need to quickly get the word out. He has a personal goal of trying to send out a weekly email update. An email list is already going for this project. People can opt in to email, text messages, or both. He intends to send a brief update weekly. Variable Message Boards (VMBs) are used a lot throughout the downtown to advertise upcoming events. They would use those for planned changes in traffic patterns, or major events they want people to know about well in advance.

Mr. Lussier continued that the project webpage is something they have been using all along. They update it periodically with presentations such as tonight's, which will be an ongoing practice. Lastly, they are right now working with the New Hampshire Department of Safety to get access to their emergency push notification system. They have not yet gone through the training, so he does not know what the rules are around emergency versus non-emergency traffic and what they are and are not allowed to use the system for. They hope some of these announcements can be used for

that. The advantage is that they can target just the people who have cell phones or landlines within the project area, for example. That is still up in the air.

Mr. Redfern stated that he has sat through the very first meeting that Stantec did, to this meeting, and he wants to say that the outreach for this project has been incredible. The avenues that have been taken, the effort from staff, the effort from Stantec, right down to talking about the types of colors of trash cans. He asks that they please not put a future Council through this. The current Council and team have done the heavy lifting. He looks forward to them moving this next year and getting it done.

Councilor Favolise thanked Stantec and the Public Works Director for the presentation. He continued that this all sounds great from a logistics standpoint, from a communications standpoint, from the actual mechanics of going through construction and notifying businesses, and he really likes the idea of the ombudsman as a neutral mediator for questions and conflicts. He does not know whose responsibility this would be or where exactly this would fall, but something that strikes him as potentially useful for businesses is if they could put together, as a City, some sort of directory or group of external resources. One that comes to mind is the Small Business Development Corporation (SBDC). That could help with financial planning, which he has heard is a concern, and catching some more local resources. They have the logistics piece down really well. He wonders if they could better connect businesses to or make them aware of some resources that are in the state.

Mr. Lussier stated that one of those external resources is coming up next month. He continued that the Hannah Grimes Center has teamed with Radically Rural, hosting a presentation next month. It is all about surviving projects like this. He knows staff will be interested in that. They have also talked about getting together with that group for a one-on-one discussion with them.

Councilor Haas asked about the cross hatches on the slide that showed the phases of the project. He asked if all of the areas that are cross-hatched will be opened up, and if the areas not cross-hatched will not be opened. Mr. McNamara replied that the cross-hatching is where the utilities/underground work is. He continued that the areas outside of the cross-hatching are pavement and sidewalk and will be rebuilt. They will not leave little patches of pavement in between. Councilor Haas asked if there will be holes there, and if it will be excavated. Mr. McNamara replied that most of the area will be a shallower cut, digging down to put a solid base under the pavement or sidewalks, so everything is clean and there is a matching base. Councilor Haas asked if the deep cuts will be where the cross-hatching is. Mr. McNamara replied yes.

Councilor Haas stated that Stantec mentioned that during the construction phase, they would only be doing one side of the project area at a time. He asked if it is correct that it would be the west side of Central Square into Central Square then coming from the other side, so both sides would not be shut down at once. Mr. McNamara replied that is correct. Councilor Haas stated that he is hearing that traffic might not be permitted through for construction reasons, but it will be one side at a time. Mr. McNamara replied that is correct.

Councilor Haas stated that his third question is about the three-day notice for utility shutoffs. He asked if there is any way people could be given more notice than that. Mr. Lussier replied that that the three-day notices developed over time as the compromise. He continued that the City would prefer to give a week's notice, but generally, contractors are not able to stick to that. Unfortunately, things happen in construction. Plans change, weather changes, and so on and so forth. Three days is a good middle ground. Councilor Haas replied that that is fair enough for the contract purposes, but during the project, he hopes they press to do the projections as early as they can. Mr. Lussier replied that they can certainly let people know, for example, "We know we'll be working in your neighborhood in the next two weeks," but they will not be able to give people a specific date and time

their water will be shut off, until it gets closer. Councilor Haas asked if the three-day notice means three working days, not notifying people on a Friday that their water will be off on Monday. Mr. Lussier replied that is correct.

Councilor Tobin stated that regarding the communication piece, there are the urgent day-to-day communications, but it is about establishing the expectation of communication, even starting now, as much as they can. She continued that for example, letting people know that by X date, or X month, they will have a rough timeline. It is about establishing expectations, because without that, people just keep wondering, asking questions, and feeling anxious. It would be great to make sure to communicate with Farmer's Market and other groups that are downtown but do not have a physical location all week. Regarding construction phasing, she would love to see an invasive species management plan incorporated, so that invasive species are disposed of and not transferred.

Chair Greenwald asked if there were any further questions or comments from the Committee. Hearing none, he continued that he urges the public, residents, and business owners to reach out to the MSFI Committee, the City Manager, the Public Works Director, or the City Attorney with any suggestions or ideas. They are open. He has heard some very creative thoughts. This is a partnership between the consultant, the contractors, the Public Works Department, the City Manager, and the Council. They want to hear people's creative ideas. Everyone wants to see the merchants come out of this successfully on the other side. He has no doubt the project will be great. He really would like to see all of the same businesses and restaurants be there when the project is complete. He thanks everyone and thanks the Committee.

Councilor Filiault made the following motion, which was seconded by Councilor Tobin.

The Municipal Services, Facilities, and Infrastructure Committee recommends the City Council approve the final design for the Downtown Infrastructure Project, and that the City Manager be authorized to do all things necessary to implement the project with the street furnishing, materials, and design preferences discussed.

Councilor Favolise asked how this will be presented to the City Council, in terms of a report. He continued that he asks because there have been suggestions that there are potential amendments coming forward. They went through a whole list. He wants to know if the list will be presented. Chair Greenwald replied that he imagines he will stand up and run down the list of the MSFI Committee's choices. He continued that he will not run down the list of all the alternates. He is sure that people who have been following this presentation know or can find those alternates. Then, if there is something disturbing to a Councilor, a motion to amend can be made .

Chair Greenwald asked if there were any further questions on the motion. Hearing none, he called for a vote.

The motion passed with a vote of 5-0.

KEENE DOWNTOWN INFRASTRUCTURE IMPROVEMENTS PROJECT

FINAL DESIGN REVIEW

MSFI PRESENTATION

DECEMBER 18, 2024

Seat Wall

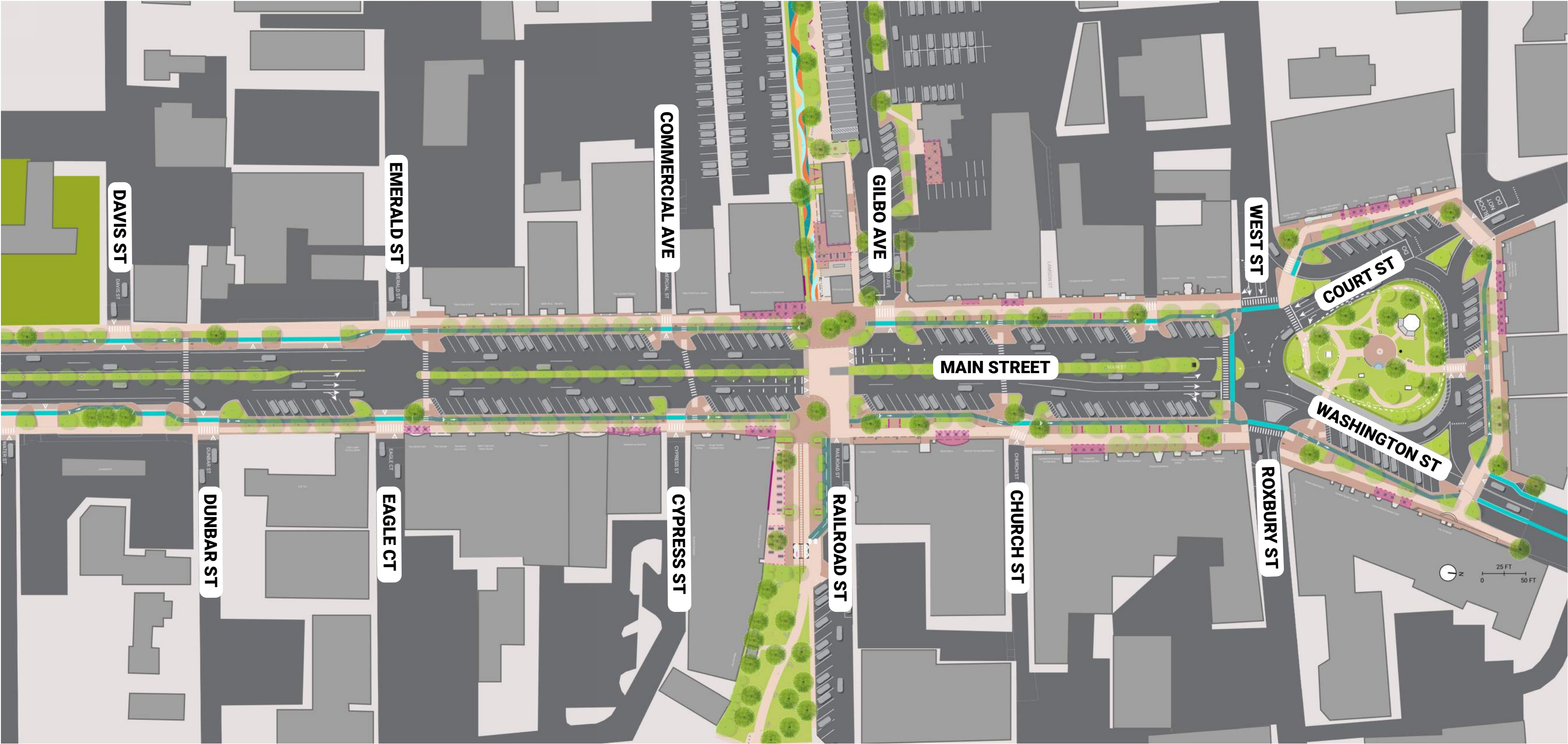
Bike Lane

Bike Rack

Public Art

Outdoor Café

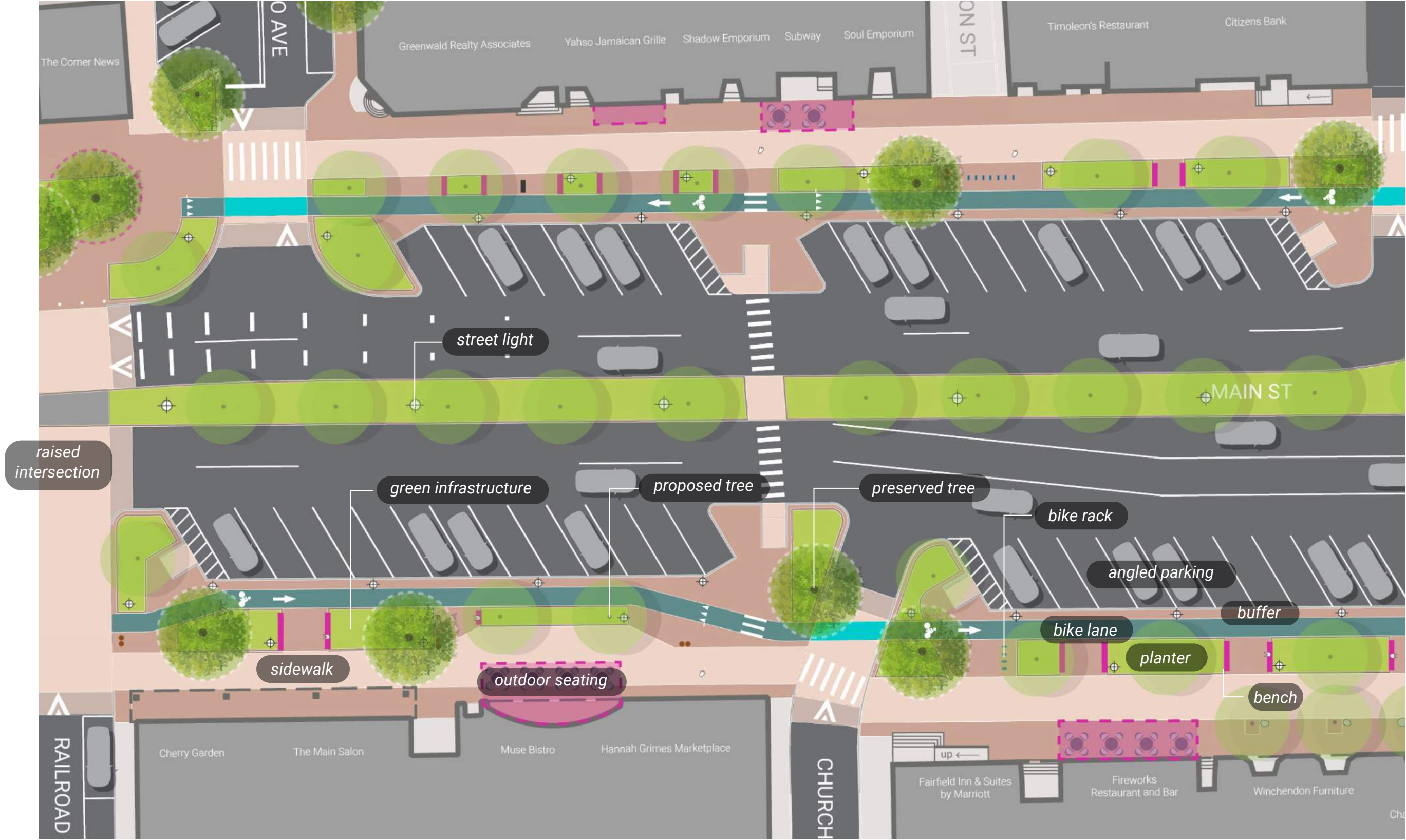
KEENE FINAL DESIGN | MAIN STREET
OVERALL SITE PLAN



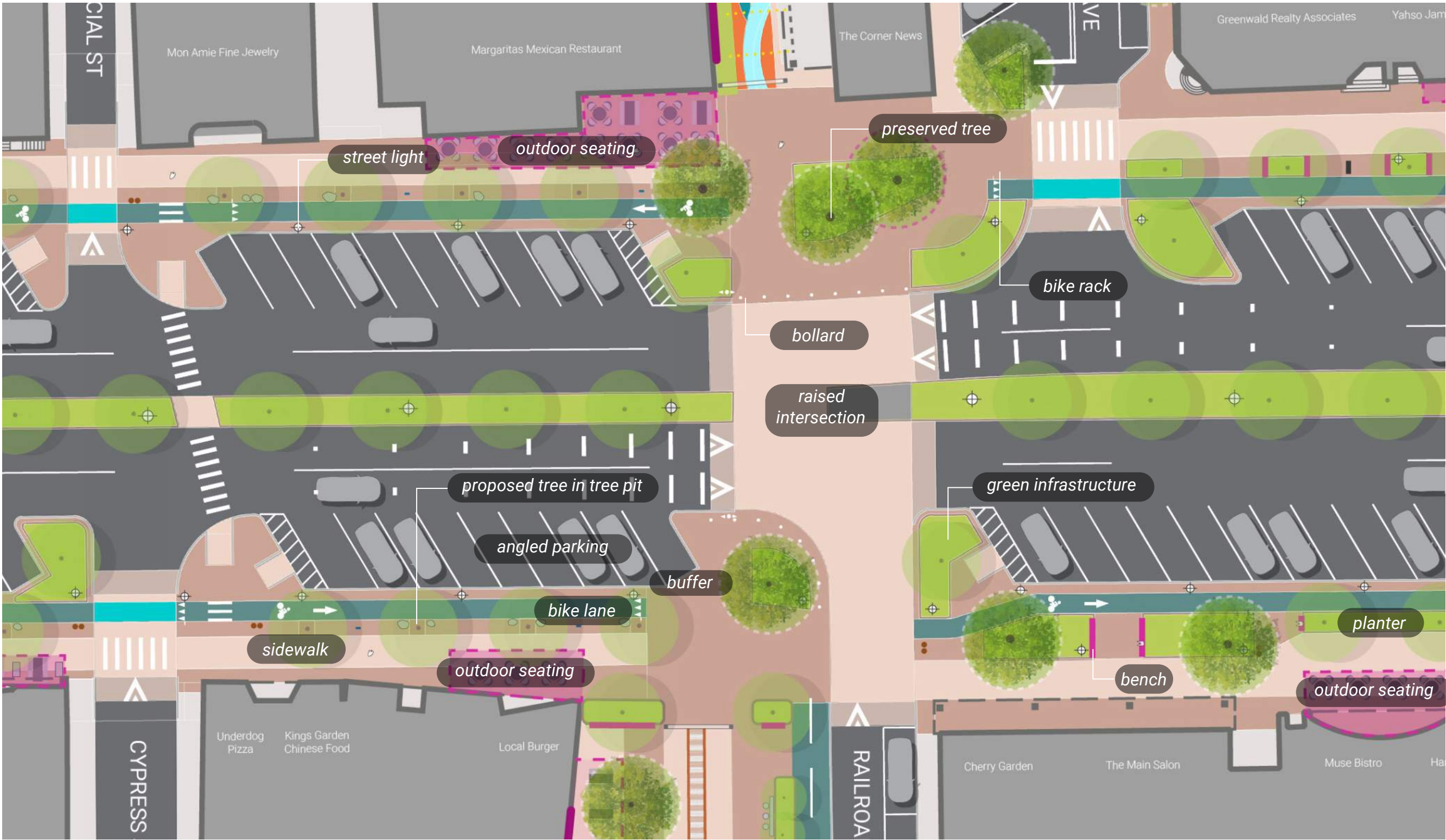
MAIN STREET



KEENE FINAL DESIGN | MAIN STREET STREETSCAPES
MAIN STREET ENLARGEMENT PLAN - RAILROAD ST TO CHURCH ST



KEENE FINAL DESIGN | MAIN STREET STREETSCAPES
MAIN STREET ENLARGEMENT PLAN - CYPRESS ST



KEENE FINAL DESIGN | MAIN STREET STREETSCAPES
DECISION MATRIX

SIDEWALK	BIKE LANES	RAISED CROSSING	BIKE RACKS	TRASH/RECYCLE	HYDRANTS
Option 1 - Standard Concrete	Option 1 - Concrete	Option 1 - Concrete	Option 1 - U-Rack	Option 1 - Treetop Products Trash Cans	Option 1
Option 2 - Standard and Stamped Concrete Combo	Option 2 - Bituminous	Option 2 - Bituminous	Option 2 - U-Rack with Signage	Option 2 - Landscape Forms Poe Litter	Option 2
		Option 3- Unit Pavers		Option 3 - Big Belly	Option 3
PLANTER CURBS	TREE WELLS	TRAFFIC SIGNAL BASE	POWER PEDESTALS	LIGHT BOLLARD	
Option 1 - Vertical Granite	Option 1 - Permeable Pavers	Option 1	Option 1	Option 1	
Option 2 - Vertical Granite with Railing	Option 2 - Porous Resin Bound Paving	Option 2	Option 2	Option 2	
				Option 3	

KEENE FINAL DESIGN | MAIN STREET STREETSCAPES
SURFACE TREATMENT

STANDARD CONCRETE (BROOM FINISH AND/OR EXPOSED AGGREGATE)



KEENE FINAL DESIGN | MAIN STREET STREETSCAPES
SURFACE TREATMENT

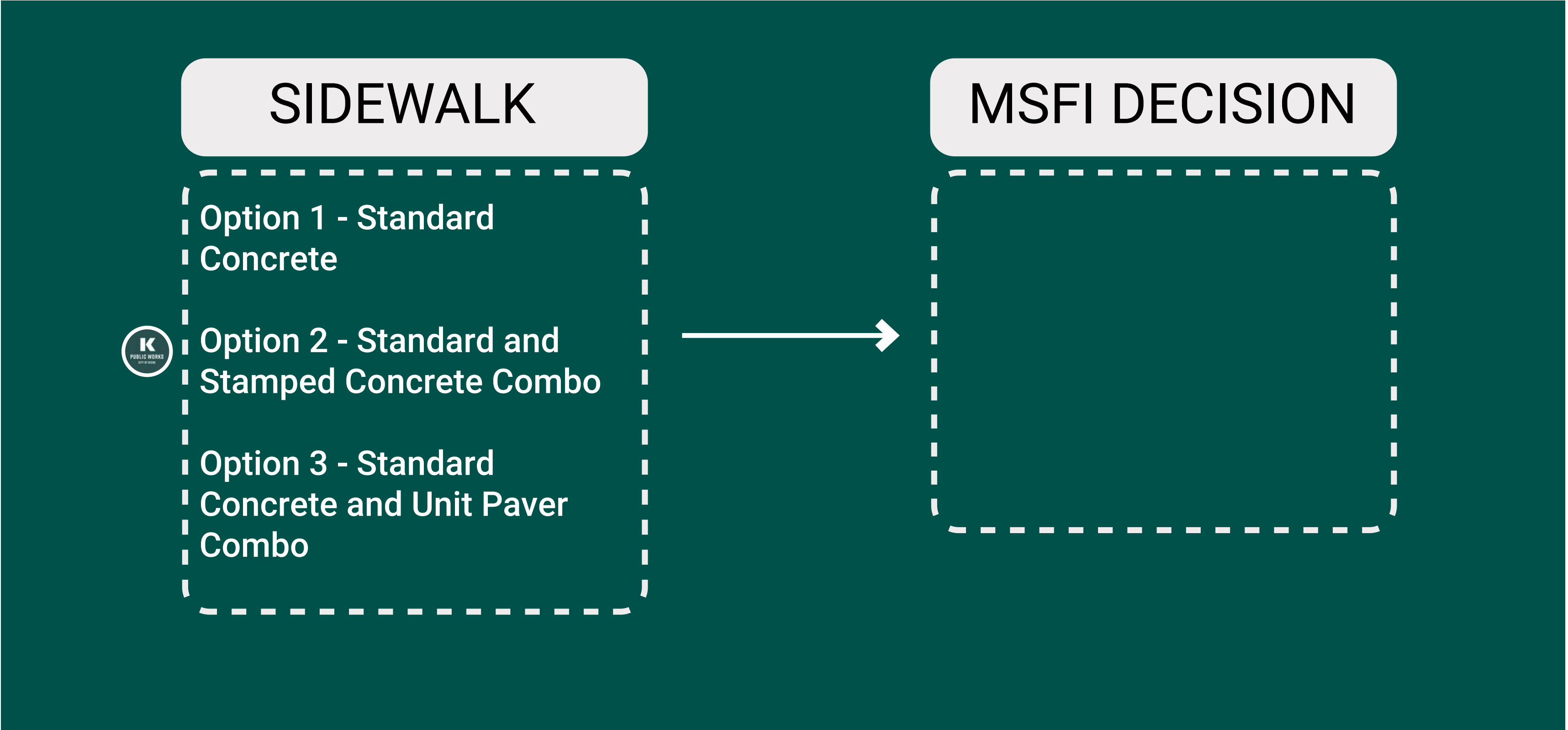
STANDARD AND STAMPED CONCRETE COMBINATION



KEENE FINAL DESIGN | MAIN STREET STREETSCAPES
SURFACE TREATMENT

CONCRETE AND UNIT PAVER COMBINATION





KEENE FINAL DESIGN | MAIN STREET STREETSCAPES
SURFACE TREATMENT

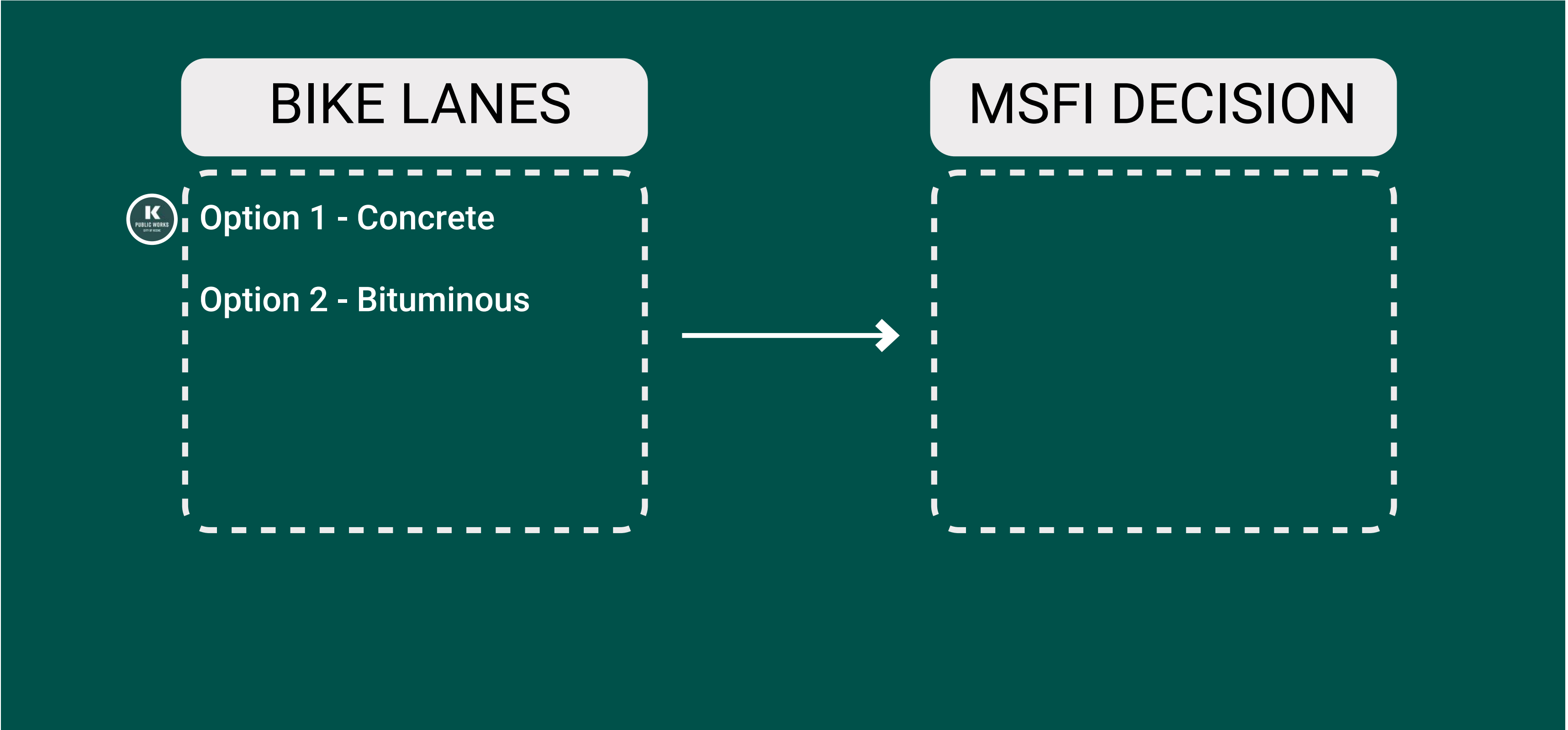
BIKE PATH

Option 1 - Concrete



Option 2 - Bituminous





KEENE FINAL DESIGN | MAIN STREET STREETSCAPES

SURFACE TREATMENT

RAISED CROSSINGS

Option 1 - Concrete

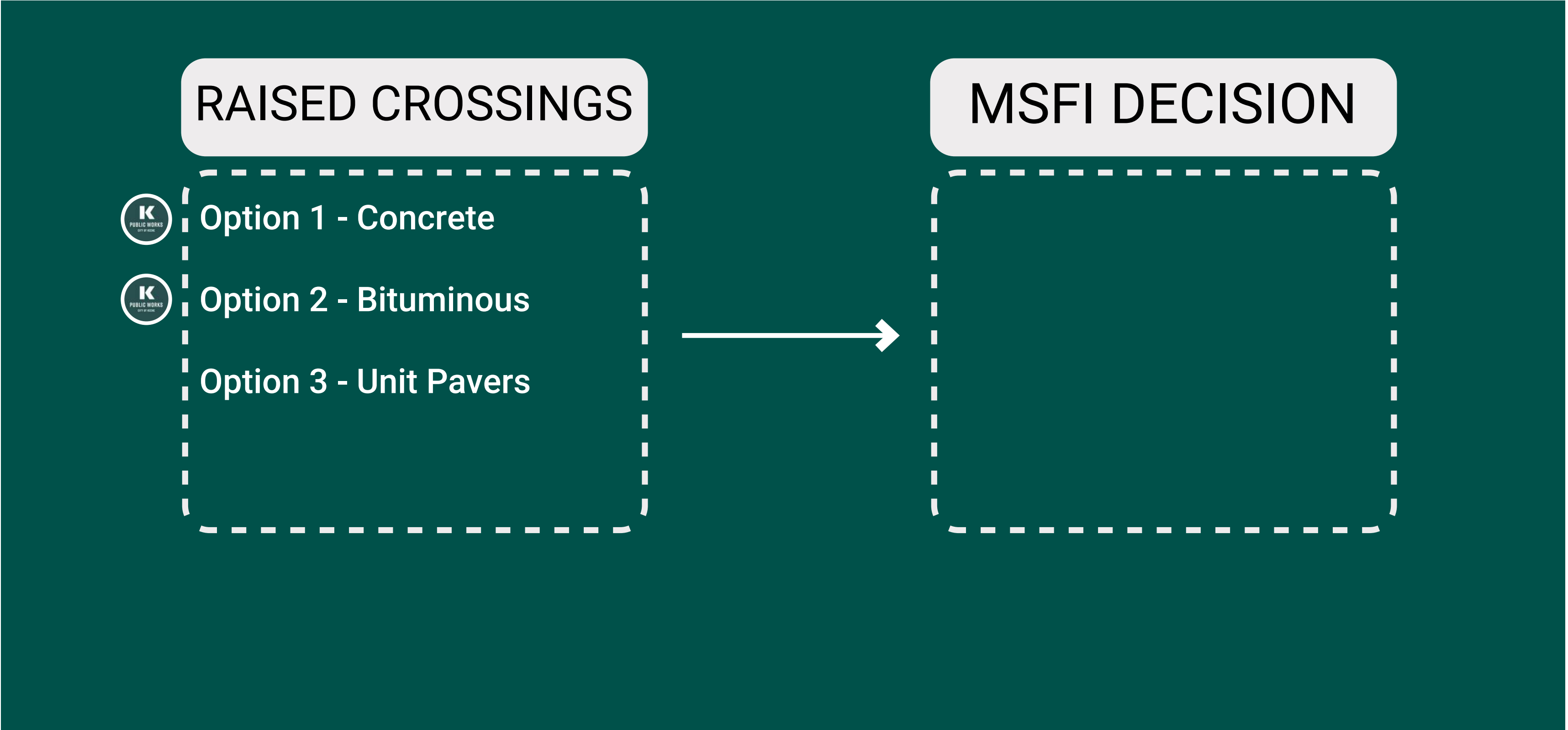


Option 2 - Bituminous



Option 3 - Unit Pavers





KEENE FINAL DESIGN | MAIN STREET STREETSCAPES
SITE FURNISHING

BIKE RACK



Bike Racks -
With or Without
City Logo

TRASH AND RECYCLING RECEPTACLE

Option 1



Option 3

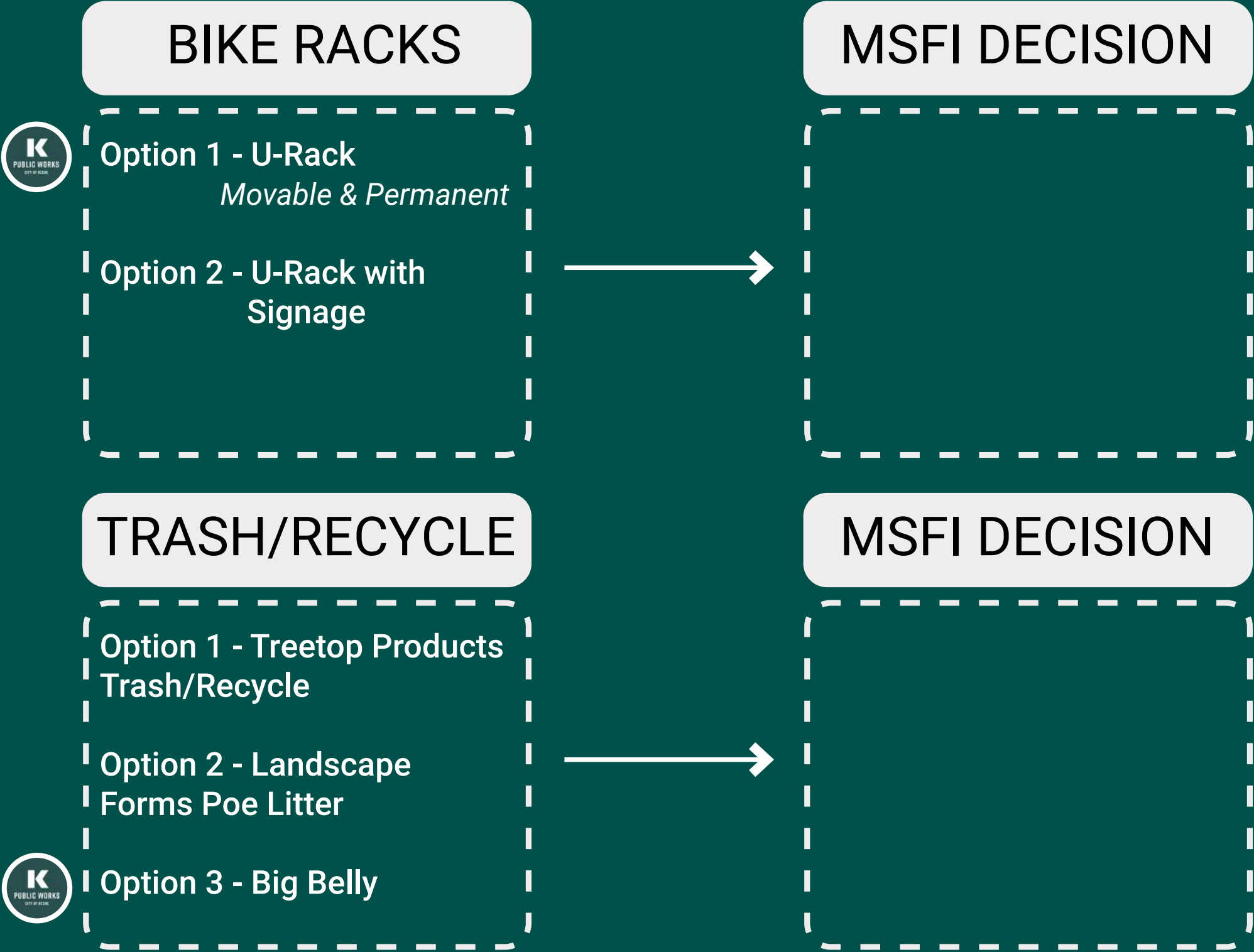


Option 2



Existing Dual Trash/Recycling





KEENE FINAL DESIGN | MAIN STREET STREETSCAPES
SITE FURNISHING

HYDRANT
Option 1



Option 2

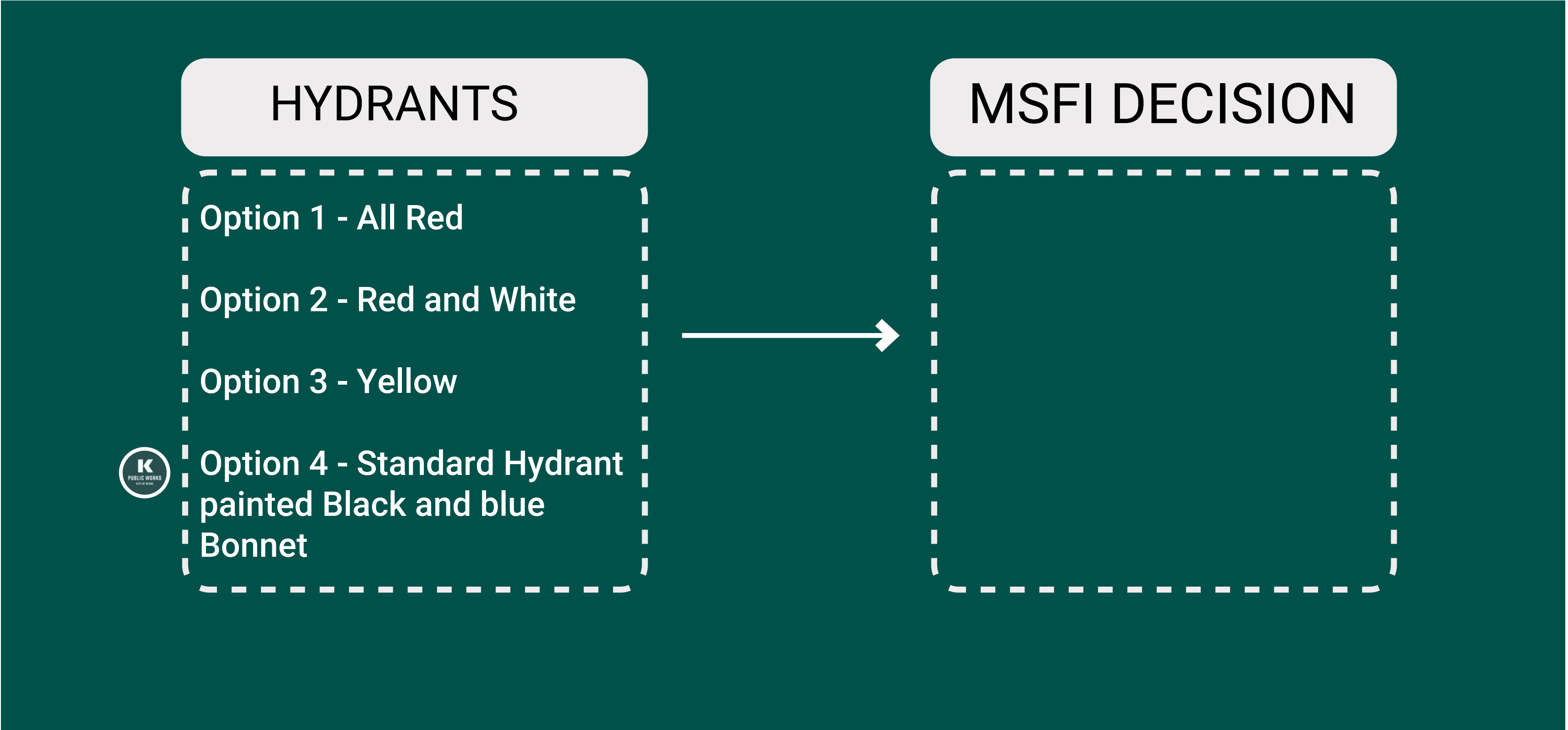


Option 3



Option 4 (Existing)





KEENE FINAL DESIGN | MAIN STREET STREETSCAPES
PLANTING

PLANTER CURBS

Existing - Planting Bed with Trees

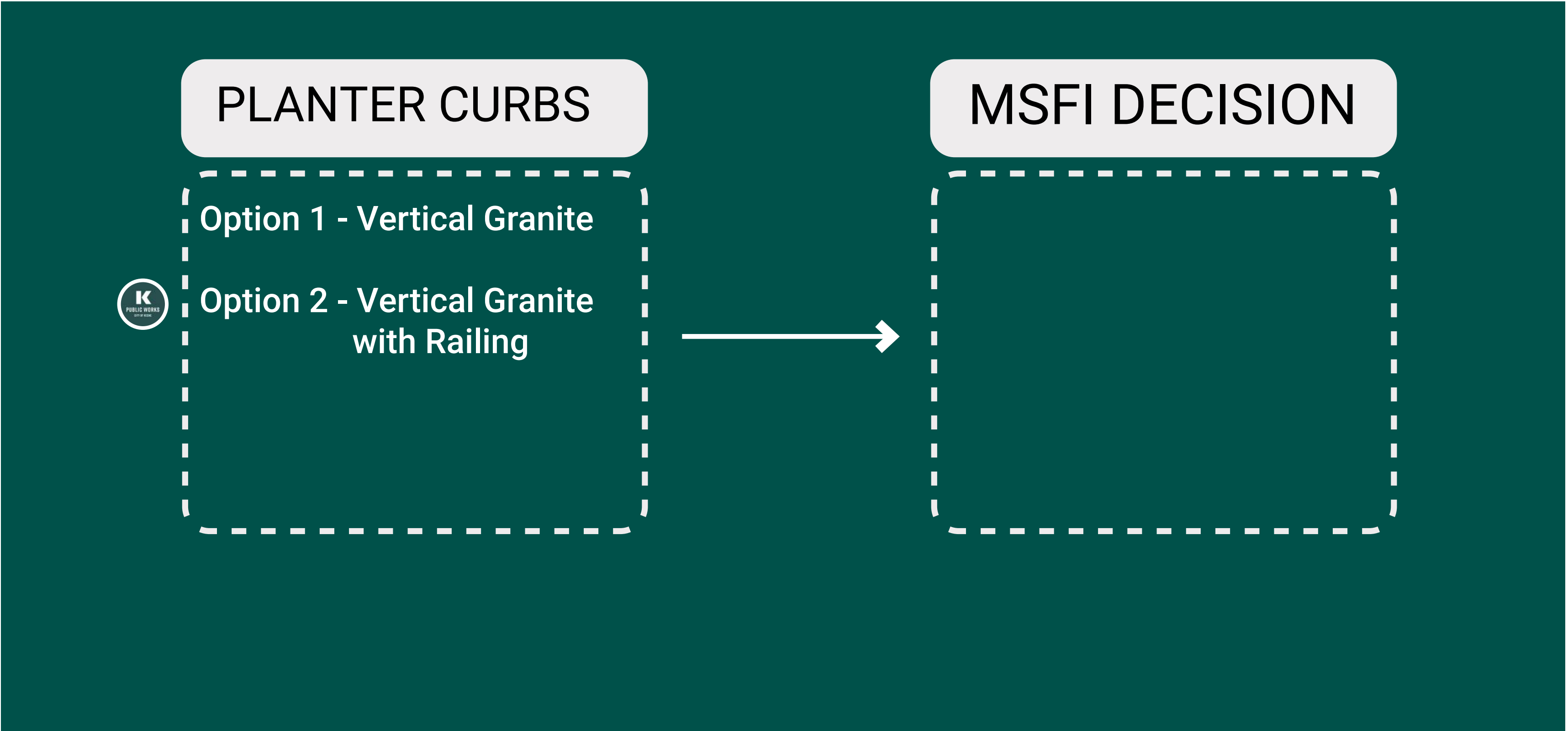


Option 1 - Vertical Granite Curb



Option 2 - Vertical Granite Curb with Railing





KEENE FINAL DESIGN | MAIN STREET STREETSCAPES
PLANTING

TREE WELLS

Existing - Tree Grate



Existing - Mulch / Planted Bed

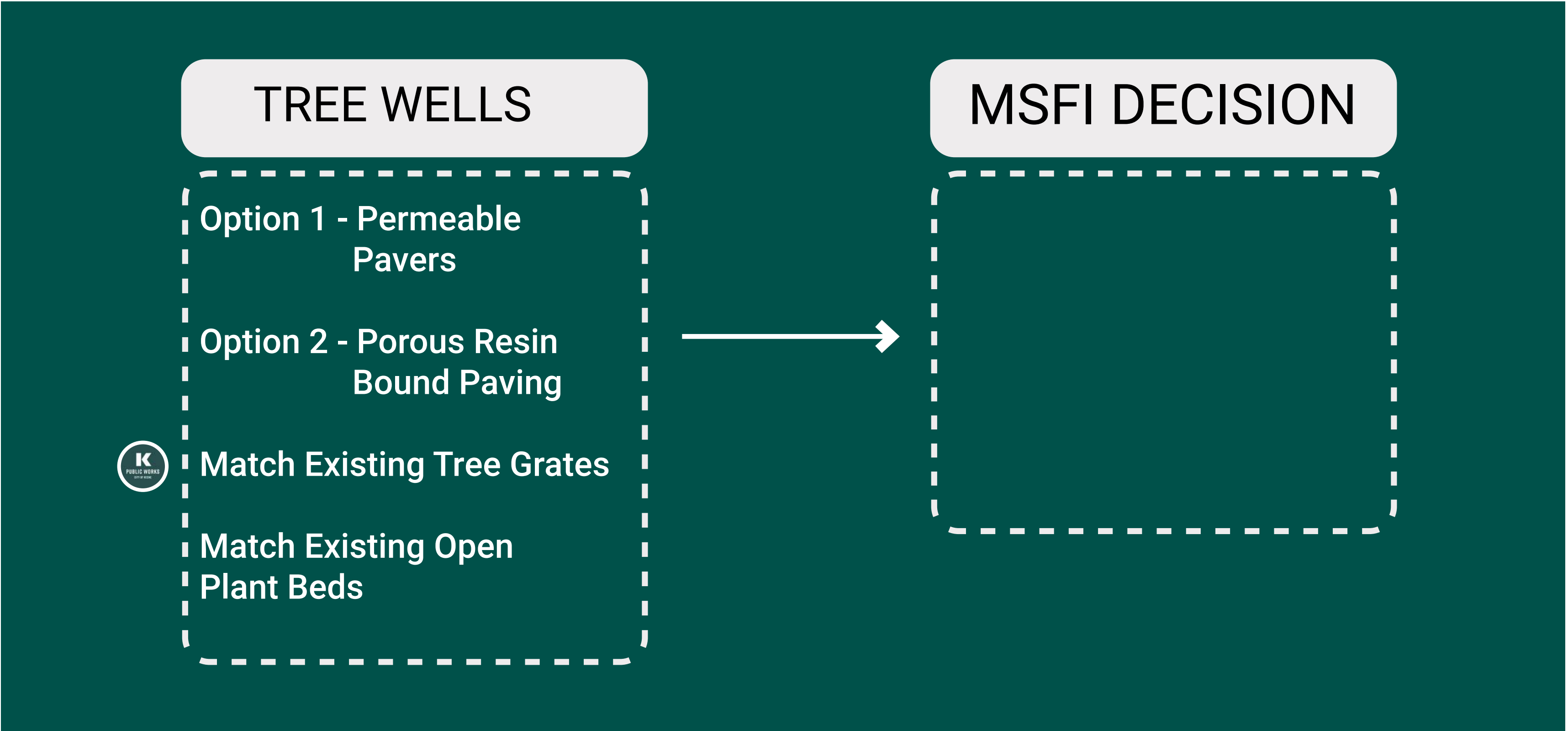


Option 1 - Permeable Pavers System



Option 2 - Porous Resin Bound Paving





KEENE FINAL DESIGN | MAIN STREET STREETSCAPES

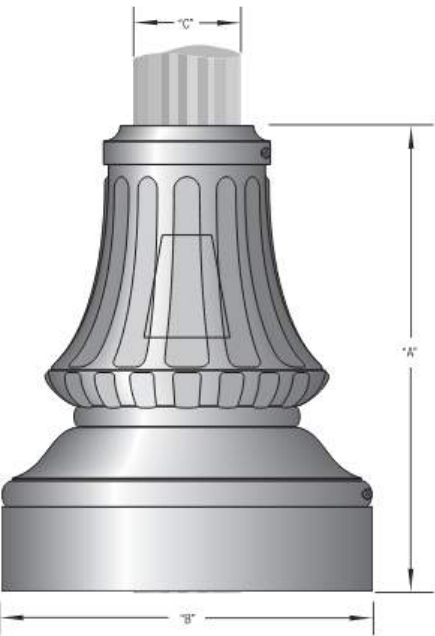
SITE FURNISHING

Ornamental Traffic Signal Base



Option 1

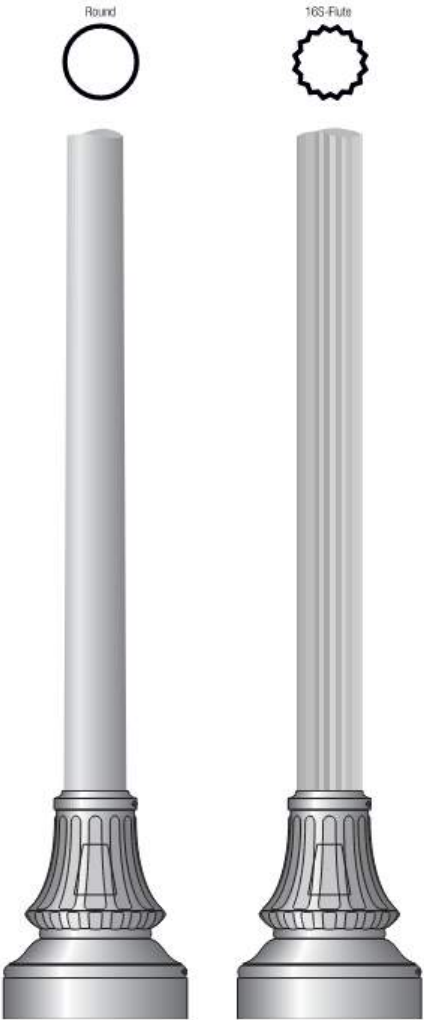
WASHINGTON (BWNR)



PART NUMBER	"A" (ft)	"B" (ft)	"C" (ft)
BWN1512	15	12	3-4
BWN2018	20-25	18	4-6
BWN3725	37	25	6.5-9
BWN4030	40	30.5	9.5-13
BWN4336	43	36	13.5-18

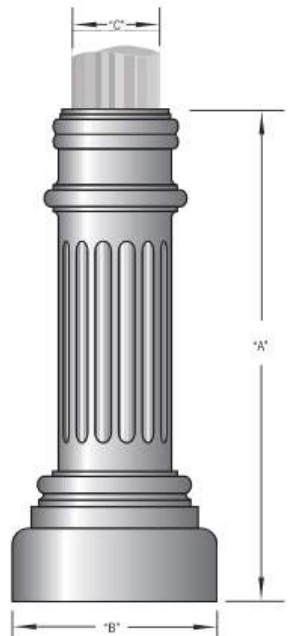
CROSS SECTION SUGGESTIONS*	
Round	16S-Flute

*Pole illustrations are examples only. Multiple cross section options are available.



Option 2

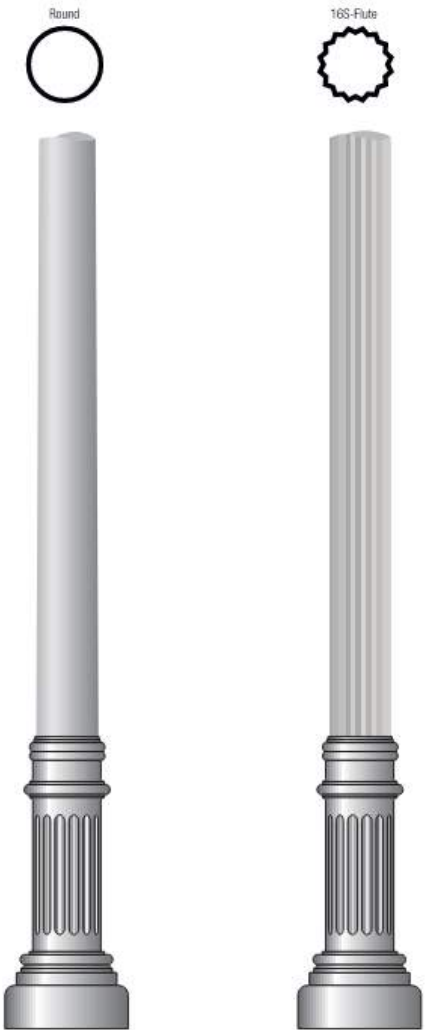
RALEIGH (BRHF)



PART NUMBER	"A" (ft)	"B" (ft)	"C" (ft)
BRHF3410	24	10	4
BRHF3015	30	15	4-6
BRHF4519	45	19	6-8.5
BRHF5127	51.125	27	9-13
BRHF5134	51	34.5	13-17.5

CROSS SECTION SUGGESTIONS*	
Round	16S-Flute

*Pole illustrations are examples only. Multiple cross section options are available.



TRAFFIC
SIGNAL BASE

Option 1 - Washington Base

Option 2 - Raleigh Base



MSFI DECISION

KEENE FINAL DESIGN | MAIN STREET STREETSCAPES
SITE FURNISHING

LIGHTING
Pole Lights and Power Pedestal



Option 1

Option 2



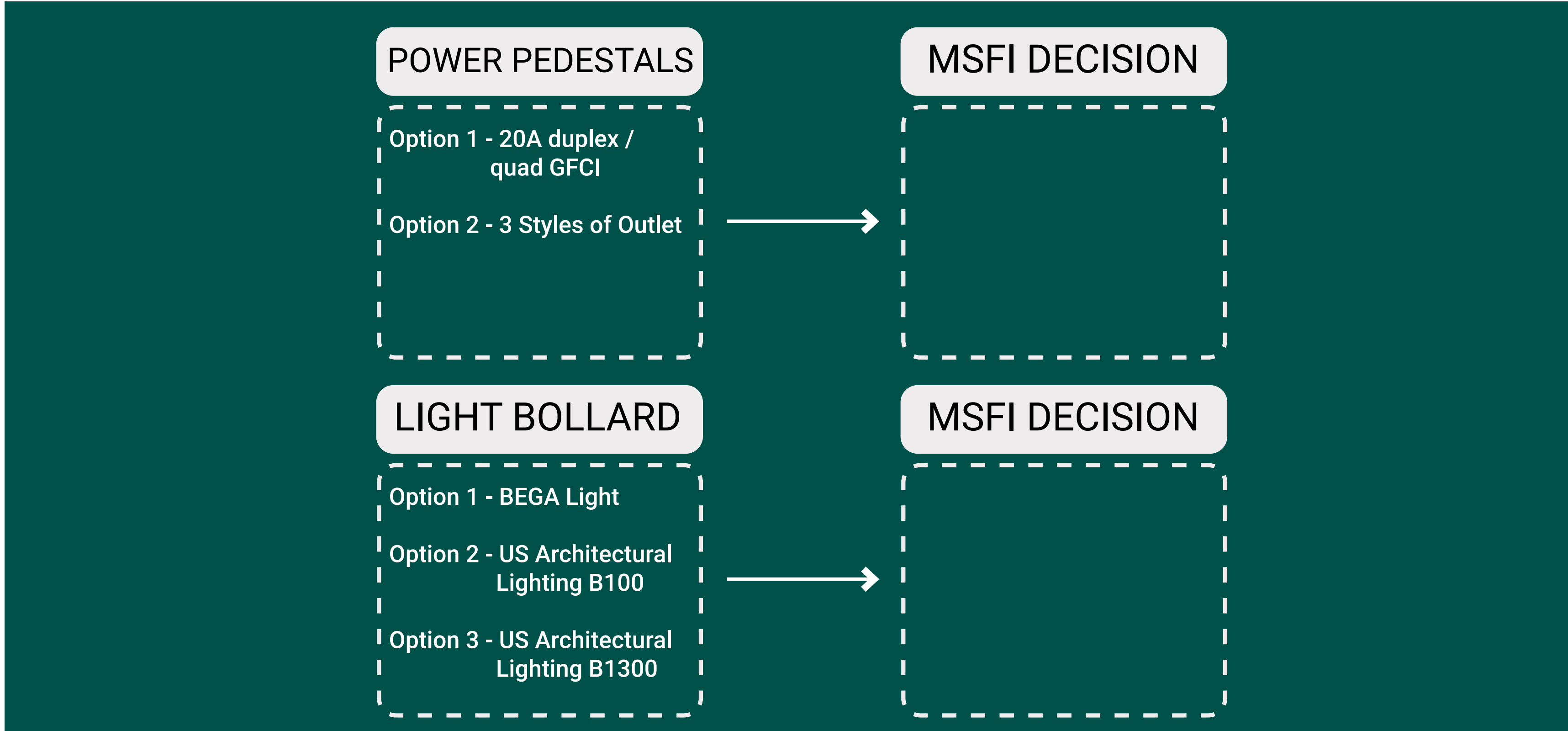
Bollard Light
Option 1



Option 2

Option 3





KEENE FINAL DESIGN | MAIN STREET STREETSCAPES

DECISION MATRIX SUMMARY

SIDEWALK Option 1 - Standard Concrete Option 2 - Standard and Stamped Concrete Combo	BIKE LANES Option 1 - Concrete Option 2 - Bituminous	RAISED CROSSING Option 1 - Concrete Option 2 - Bituminous Option 3- Unit Pavers	BIKE RACKS Option 1 - U-Rack Option 2 - U-Rack with Signage	TRASH/RECYCLE Option 1 - Treetop Products Trash Cans Option 2 - Landscape Forms Poe Litter	HYDRANTS Option 1 Option 2 Option 3
PLANTER CURBS Option 1 - Vertical Granite Option 2 - Vertical Granite with Railing	TREE WELLS Option 1 - Permeable Pavers Option 2 - Porous Resin Bound Paving	TRAFFIC SIGNAL BASE Option 1 Option 2	POWER PEDESTALS Option 1 Option 2	LIGHT BOLLARD Option 1 Option 2 Option 3	

GILBO AVE / RAILROAD ST



KEENE FINAL DESIGN | GILBO AVE
SITE PLAN



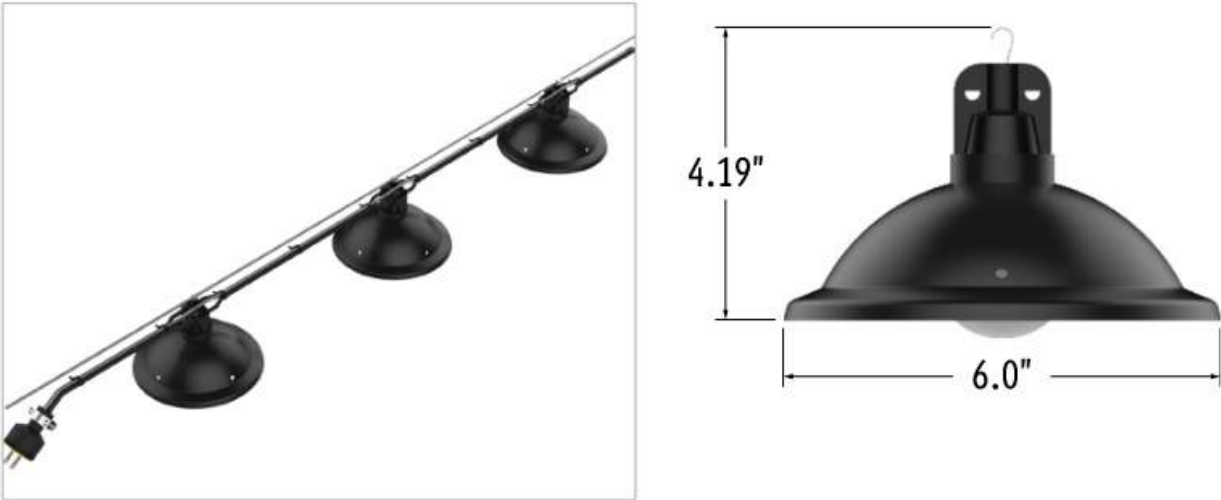
KEENE FINAL DESIGN | GILBO AVE STREETSCAPES

SITE FURNISHING

LIGHTING

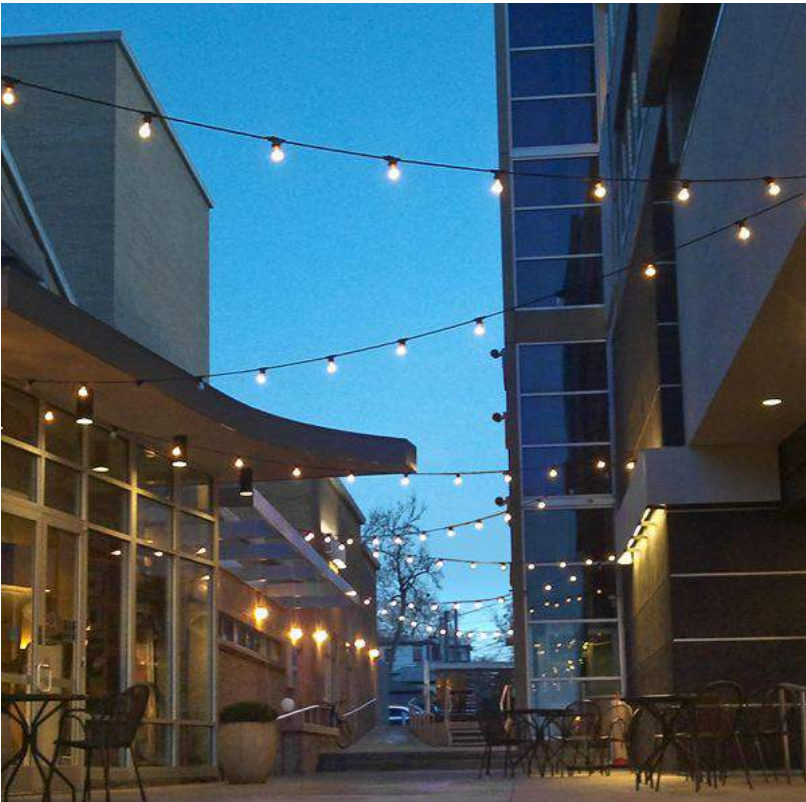
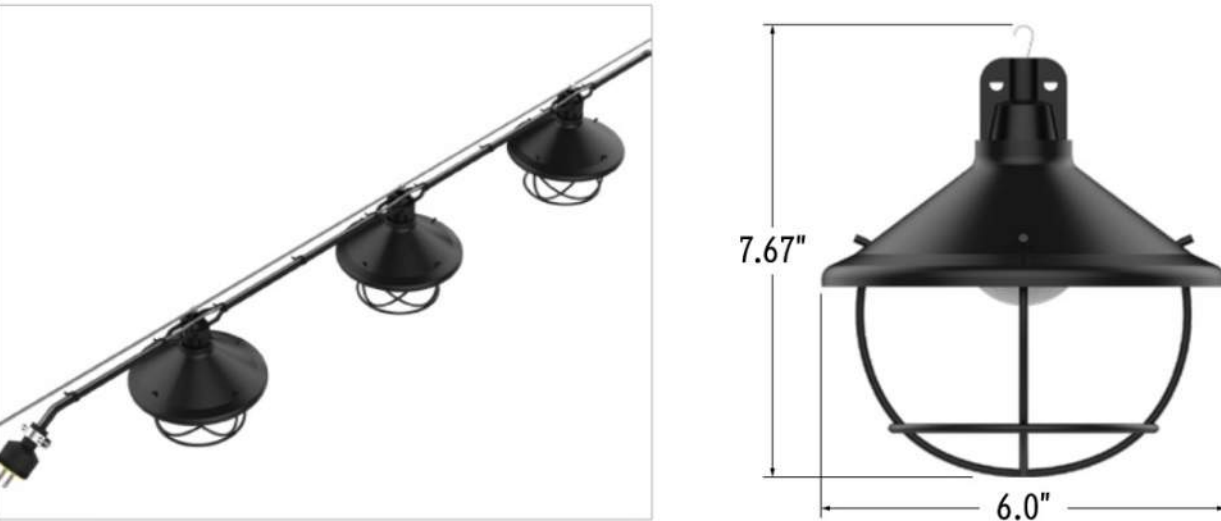
Catenary Light Fixture - Option 1

ML2000-CA | Canopy A



Catenary Light Fixture - Option 2

ML2000-CCCA | Canopy C with Cage



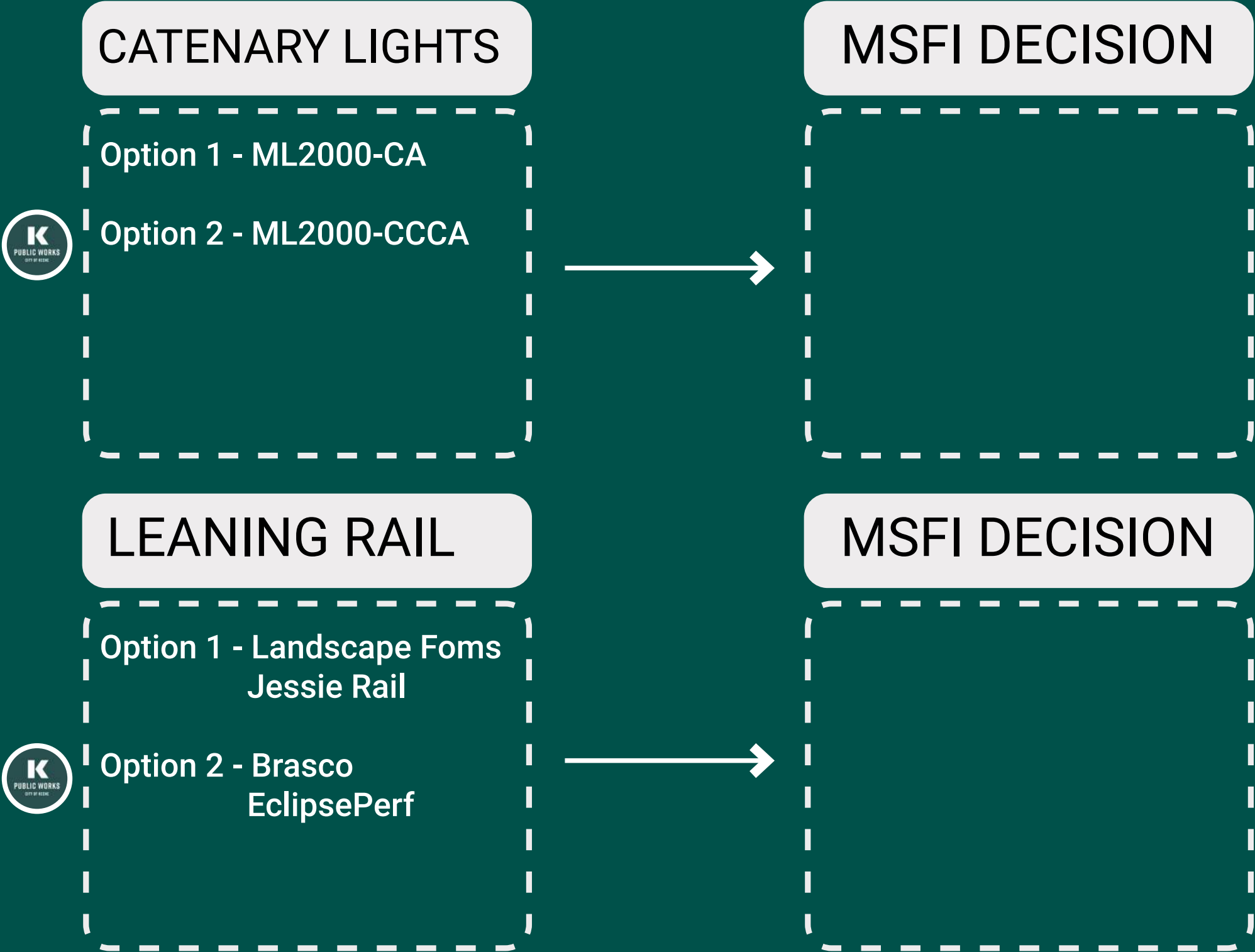
LEANING RAIL

Option 1

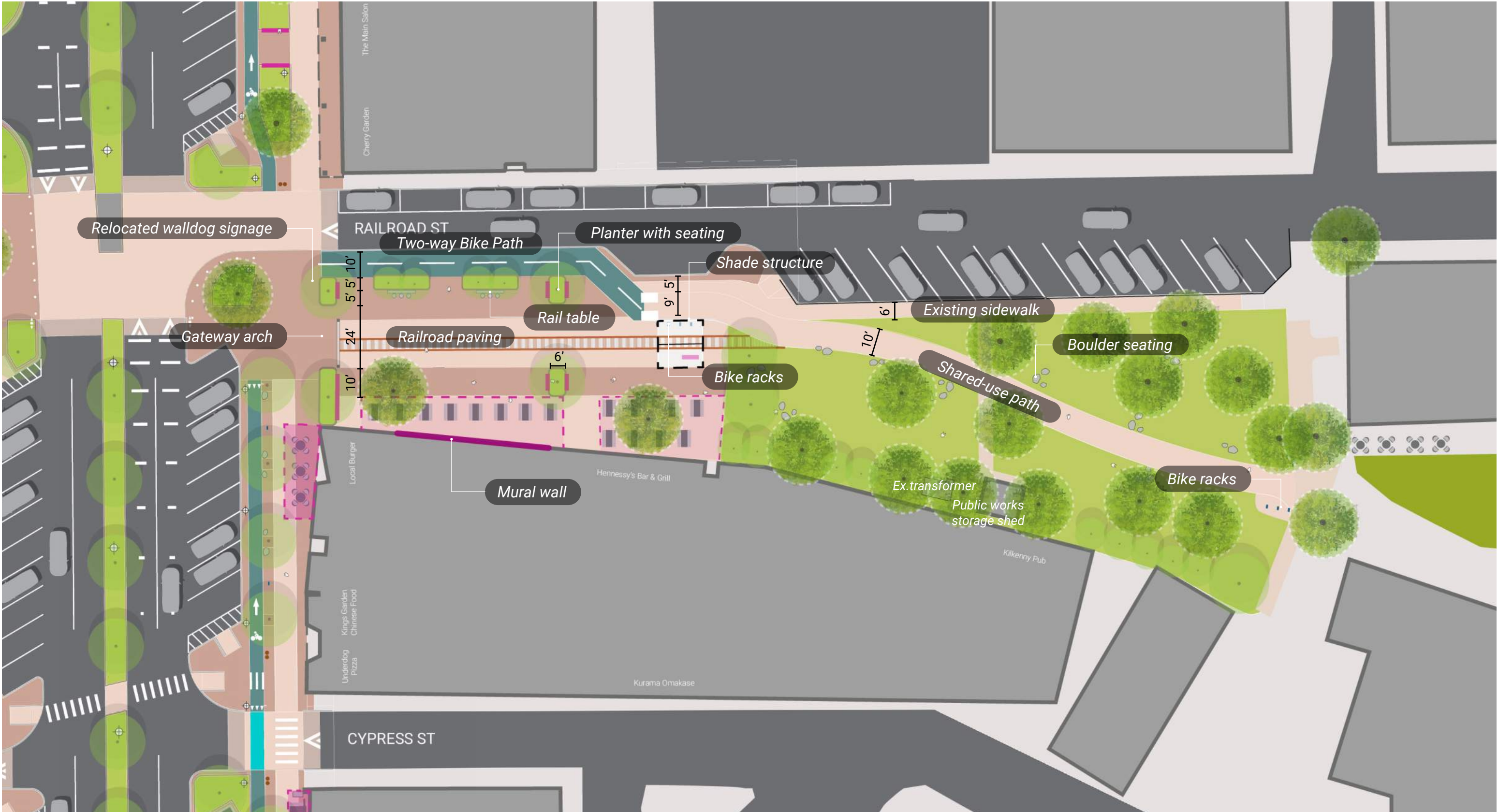


Option 2





KEENE FINAL DESIGN | RAILROAD SQUARE
CURRENT PLAN



KEENE FINAL DESIGN | RAILROAD SQUARE
SURFACE TREATMENT

STANDARD CONCRETE (BROOM FINISH AND/OR EXPOSED AGGREGATE)



KEENE FINAL DESIGN | RAILROAD SQUARE
SURFACE TREATMENT

STANDARD AND STAMPED CONCRETE COMBINATION



KEENE FINAL DESIGN | RAILROAD SQUARE
SURFACE TREATMENT

UNIT PAVERS



KEENE FINAL DESIGN | RAILROAD SQUARE
SURFACE TREATMENT

RAILROAD TRACK MATERIAL

Option 1



Option 2

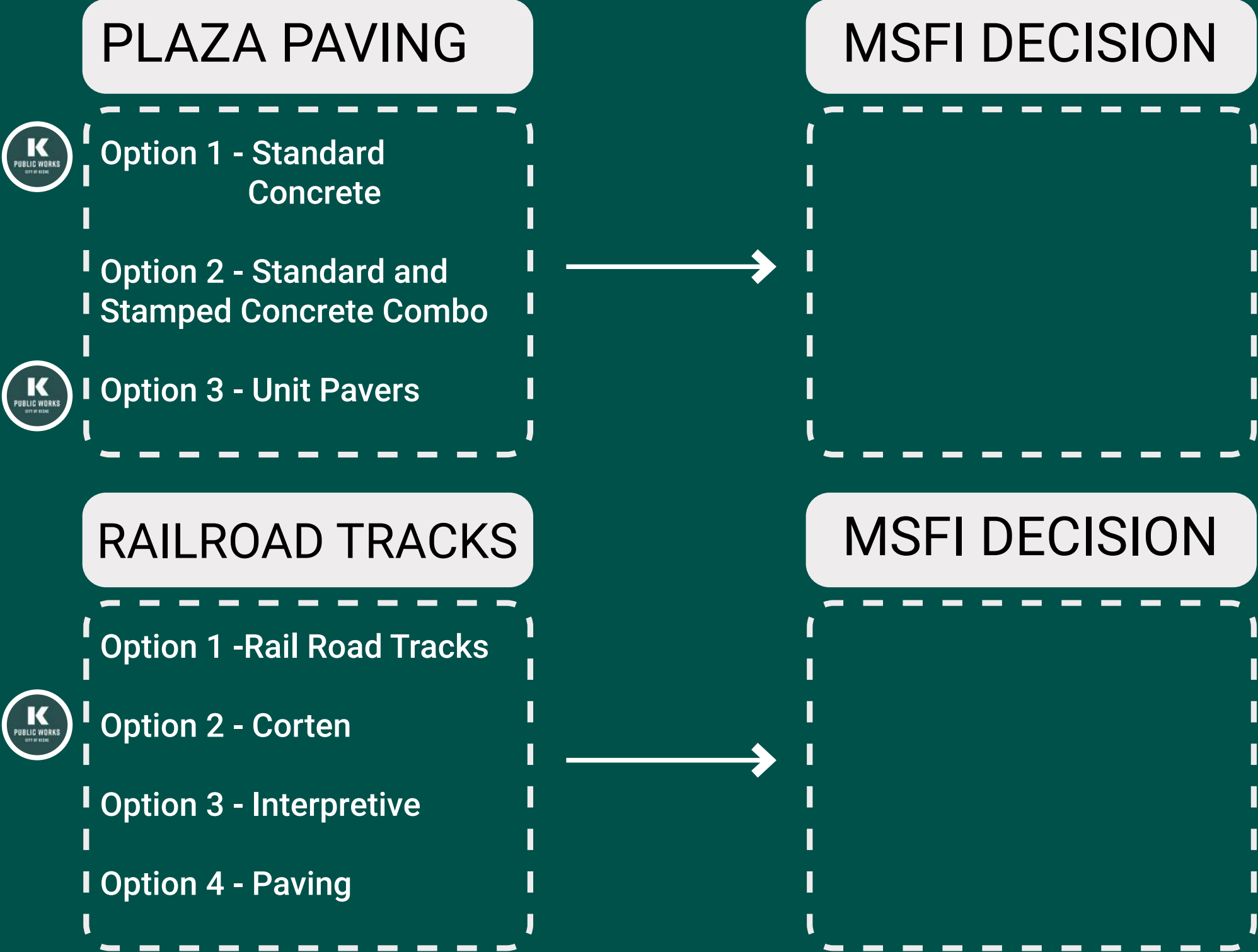


Option 3



Option 4





KEENE FINAL DESIGN | RAILROAD SQUARE
GATEWAY ARCH

Option 1 - Single Post with Brick Base



Option 2 - Double Post with Brick Base



Option 1a - Single Post with Granite Base



Keene State College



Ashuelot River Park

GATEWAY ARCH



Option 1 - Single Post with
Brick Base

Option 1a - Single Post with
Granite Base



Option 2 - Double Post with
Brick Base



MSFI DECISION

KEENE FINAL DESIGN | RAILROAD SQUARE
COVERED STRUCTURE

Option 1

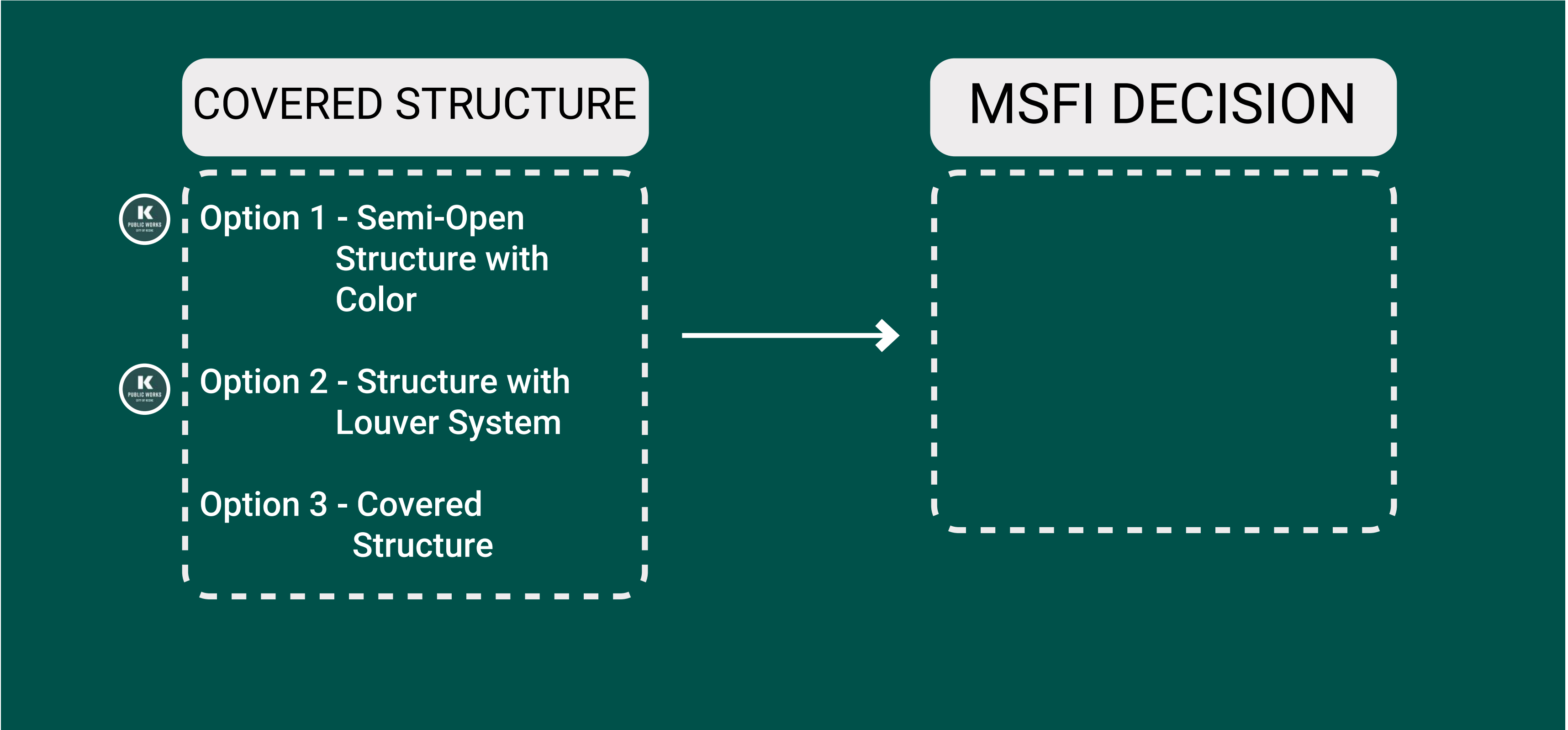


Option 2

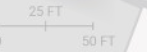


Option 3



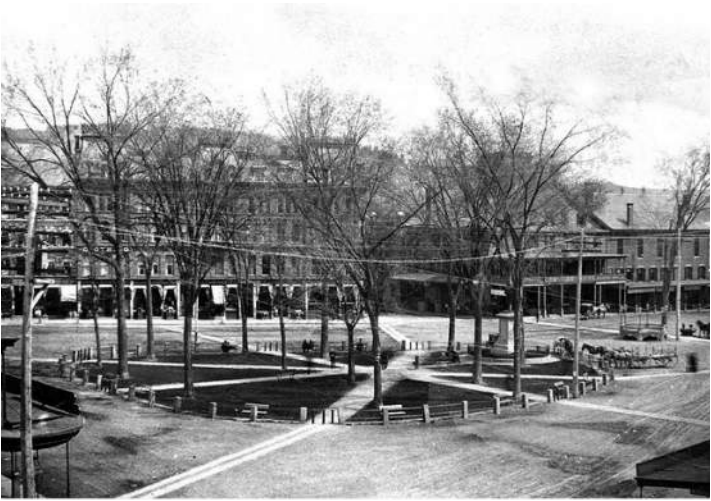
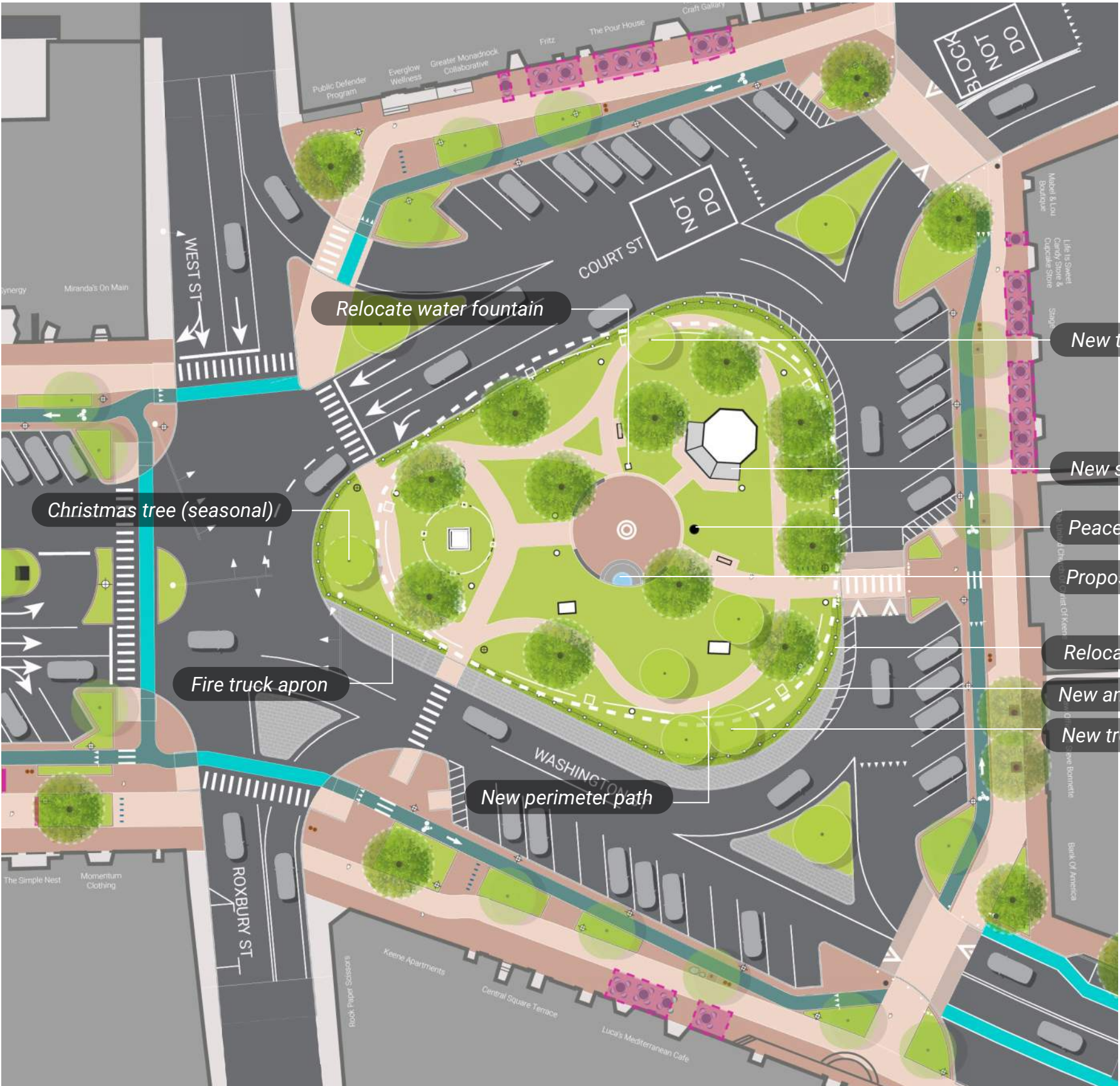


CENTRAL SQUARE



KEENE FINAL DESIGN | CENTRAL SQUARE COMMON

SITE PLAN



KEENE FINAL DESIGN | CENTRAL SQUARE
SURFACE TREATMENT

STANDARD CONCRETE (BROOM FINISH
AND/OR EXPOSED AGGREGATE)

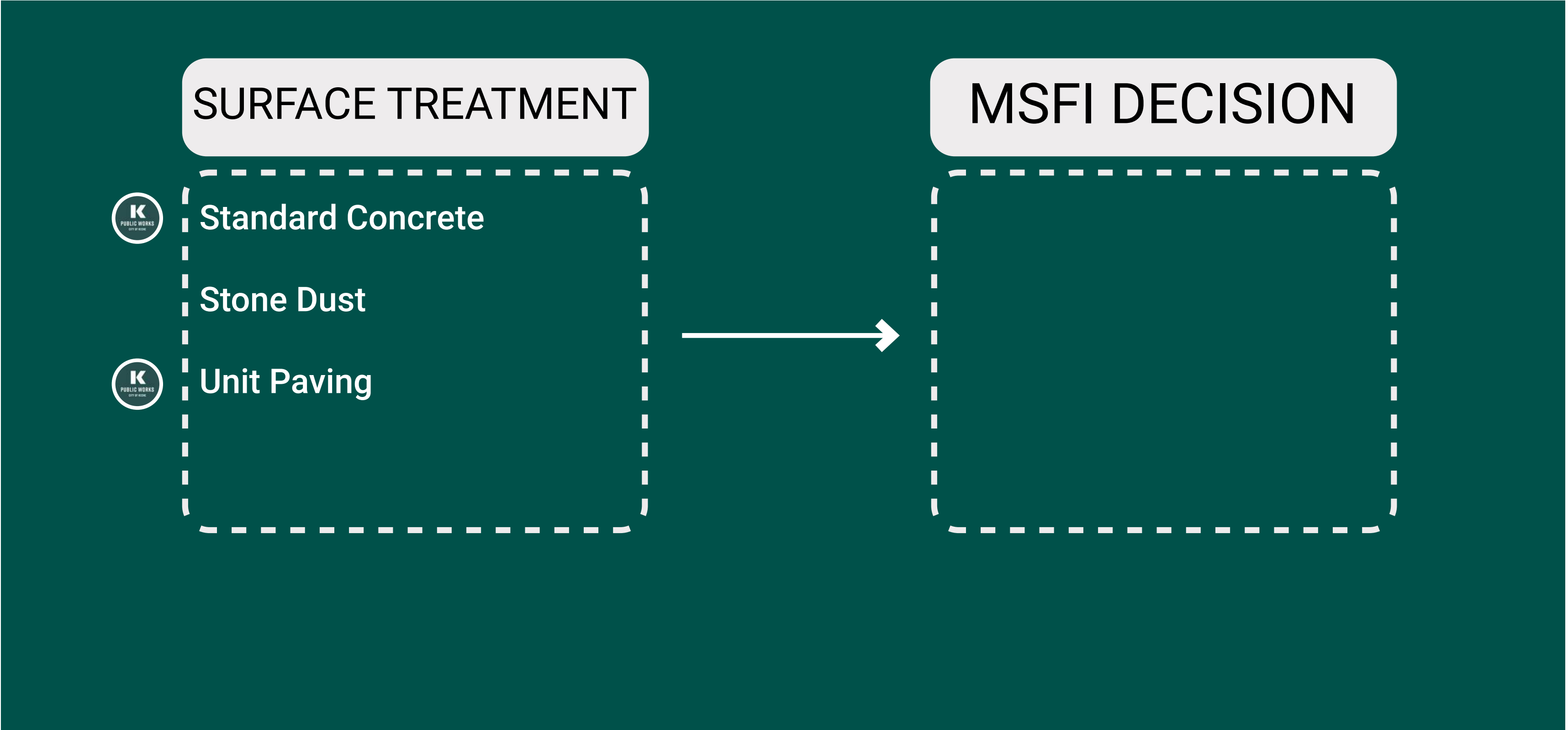


STONE DUST



UNIT PAVING FOR FOUNTAIN AREA





KEENE FINAL DESIGN | CENTRAL SQUARE
SITE FURNISHING

BENCH SEATING

Option 1



Option 2



Option 3



Option 4



BENCH SEATING

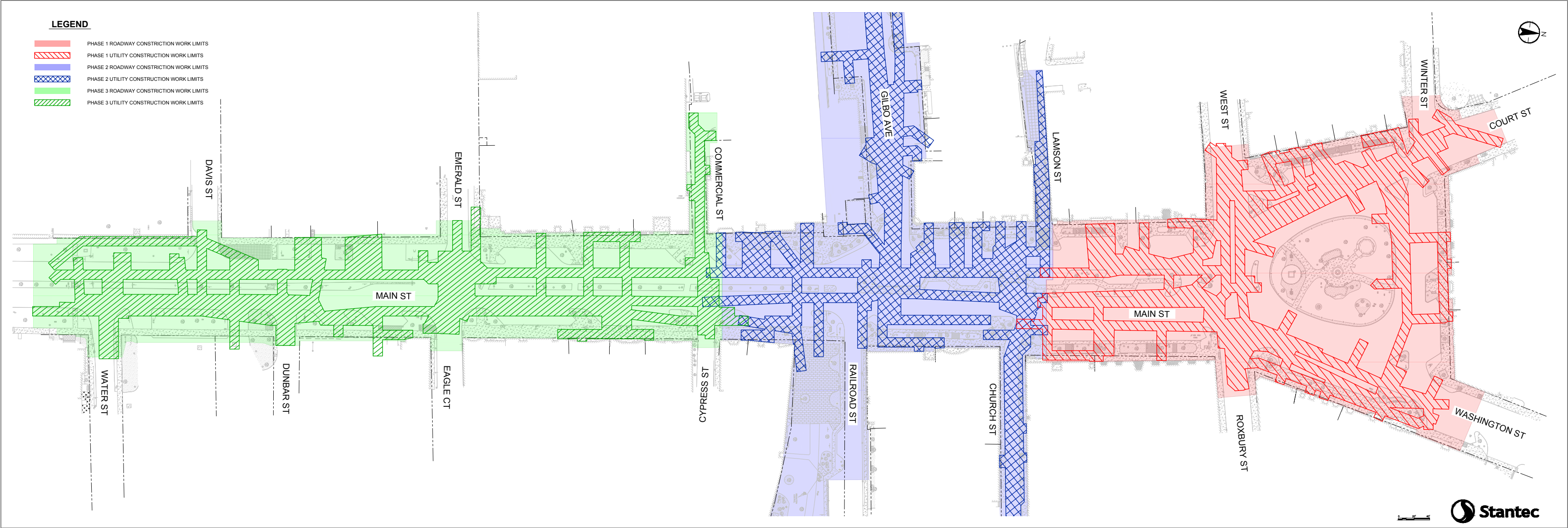
- Option 1 - Metal Bench
- Option 2 - Wood Slat Bench
- Option 3 - Wood Slat Backless Bench
- Option 4 - Stone Blocks



MSFI DECISION

KEENE FINAL DESIGN | CENTRAL SQUARE

CONSTRUCTION PHASING OVERALL



Parking

- Alternate Locations
- Limitation Inaccessible spots to 25 per stage

Sidewalks

- Staged Construction
- Temporary Ramps and “Bridges”
- Access Requirements
- Clear Signage

Building Access

- Contractor Requirement
- Advanced Notifications and Communications
- ADA
- Utility Services

Noise, Dust, Vibrations

- Monitoring
- Contract and Bid Items

Construction Contract

- Clear and Enforceable Guidelines
- Incentive/Disincentives Clauses
- Bid Items
- Detailed Hours of Operations and Limitations
- Traffic Management Parameters
- Contractor Submittal Requirements

Seasonal

- April 1 to December 1 (approximate)
- Limited Winter Activities
- Temperature Restrictions – Pavement, Compaction, Concrete

Hours

- 7 AM to 5 PM, Monday to Friday
- Saturdays and Overnight with permission

Holidays and City Activities

- Shut down noon prior
- Adjustments to Community Events

Project Ombudsman

- Liaison between businesses and Construction Team
- Attend construction meetings, updates and meet with business groups
- 20-25 hours per week

Monthly MSFI Updates

- PW Representative and Ombudsman

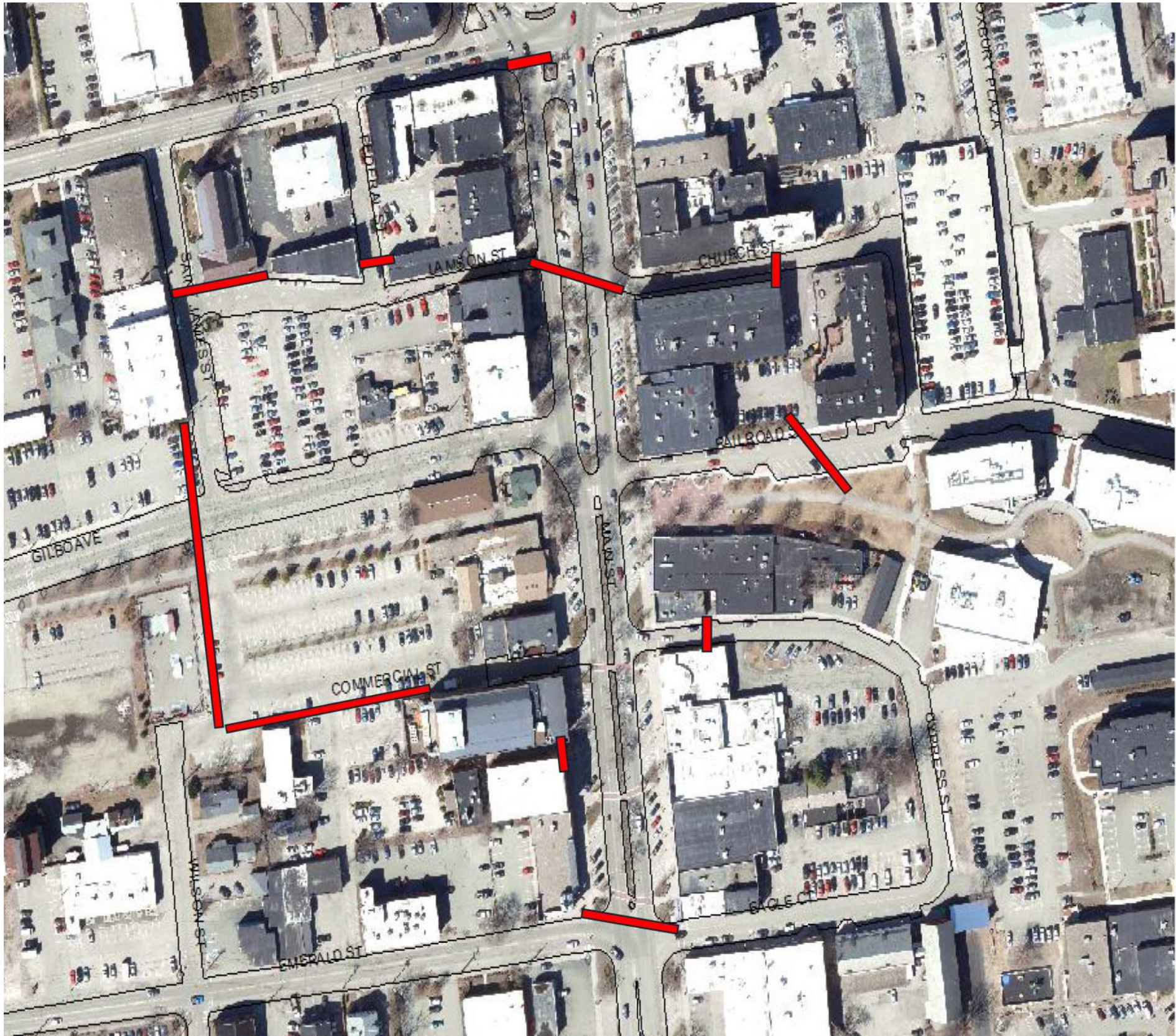
Monthly Coffee & Hardhats

- Informal meetings
- Alternating with MSFI
- Project Updates and opportunity to voice concerns

Alternative Event planning

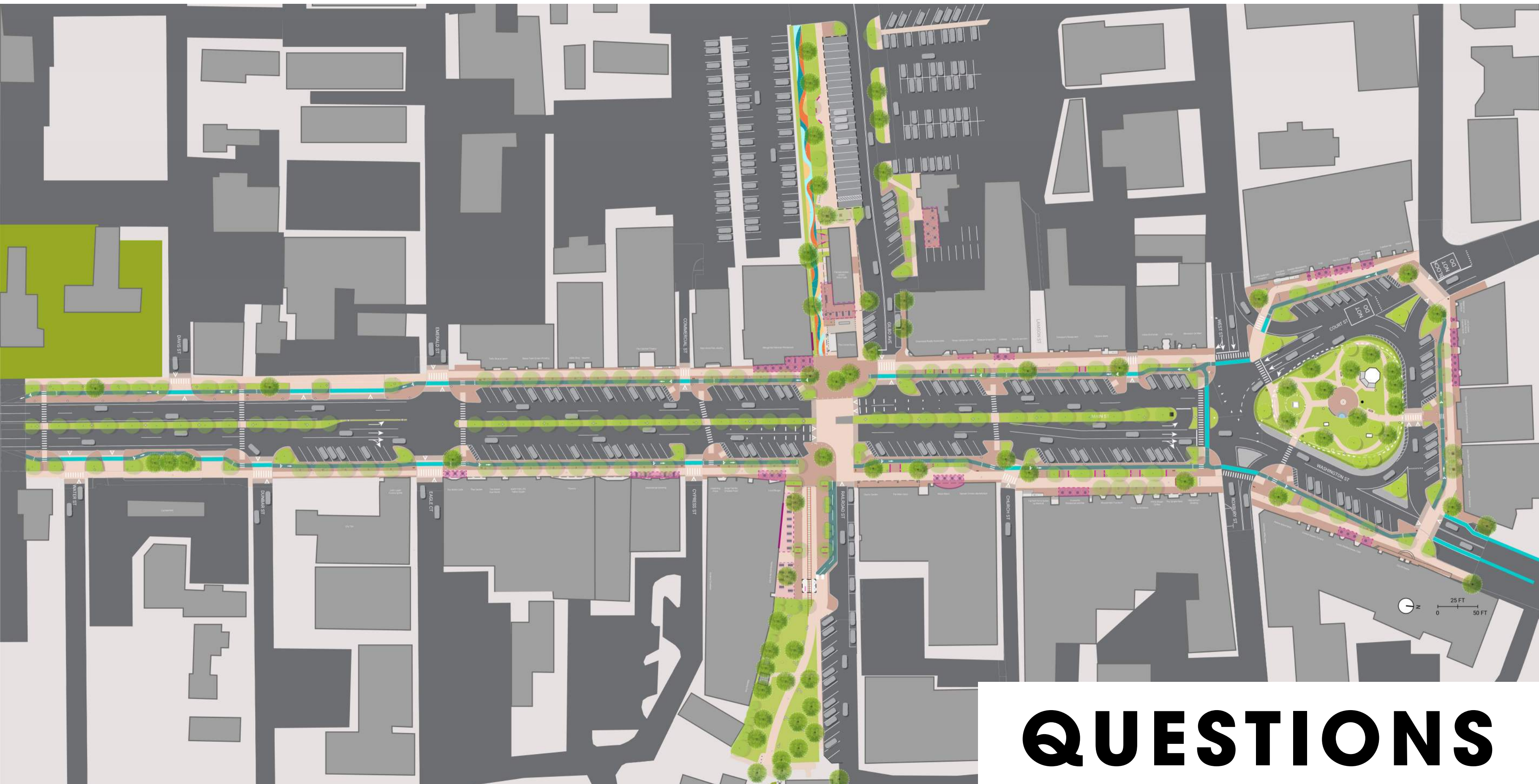
- All Community Events can be accommodated on Railroad Square / Gilbo Ave

KEENE FINAL DESIGN | MAIN STREET
BUSINESS SUPPORT AND COMMUNICATIONS



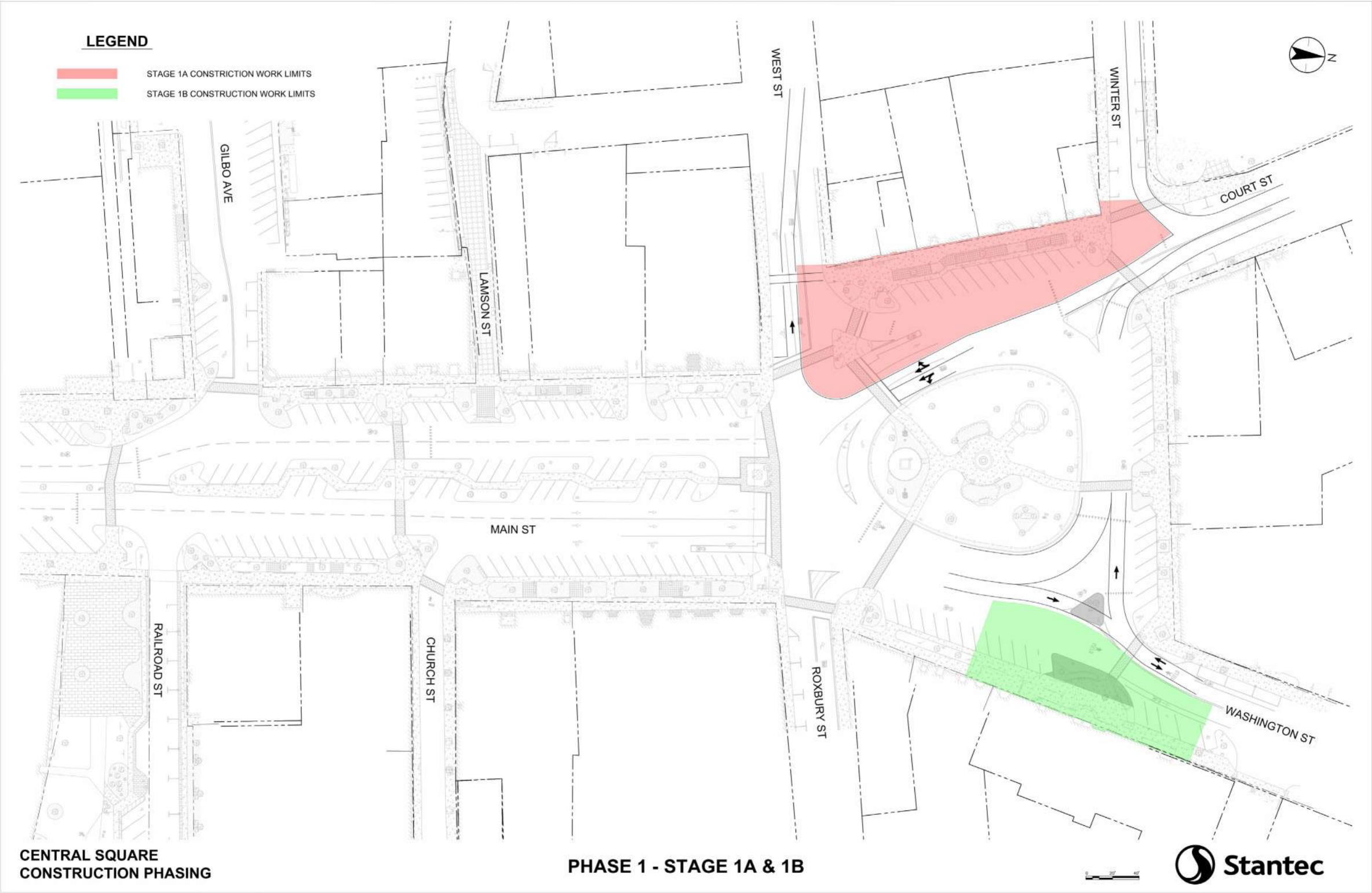
Project Communications

- Formal notice (i.e., letters) to property owners as needed
- Direct notification (e.g., door hangars) for planned utility outages
- Social and Broadcast Media used for disruptions and traffic changes
- Weekly project update via e-mail and/or text
- Use of VMB's for advanced notice of traffic changes & events
- Project Webpage for periodic general updates
- TENT: Push notification using NH DOS notification system

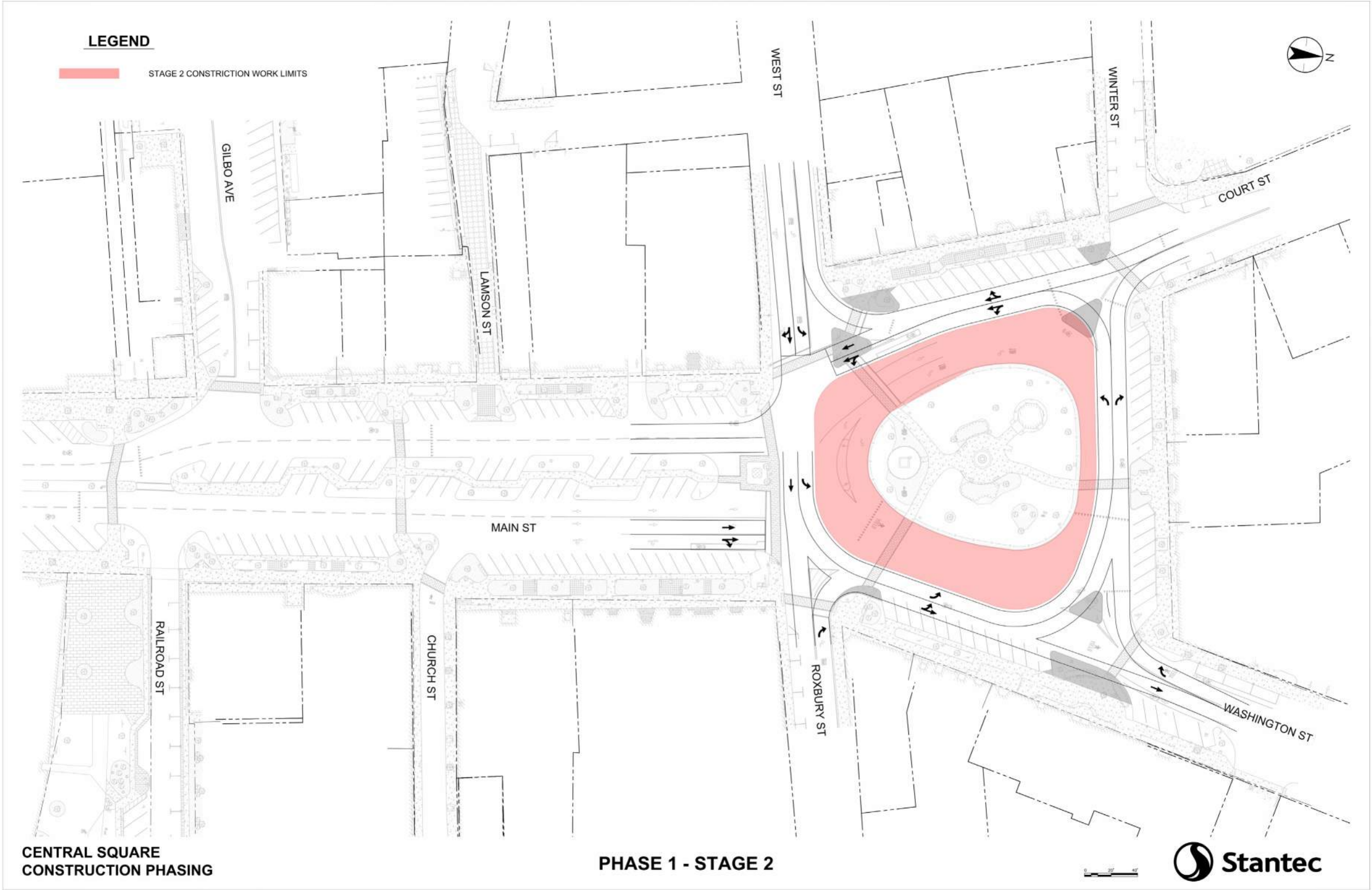


QUESTIONS

KEENE FINAL DESIGN | CENTRAL SQUARE
CONSTRUCTION PHASING

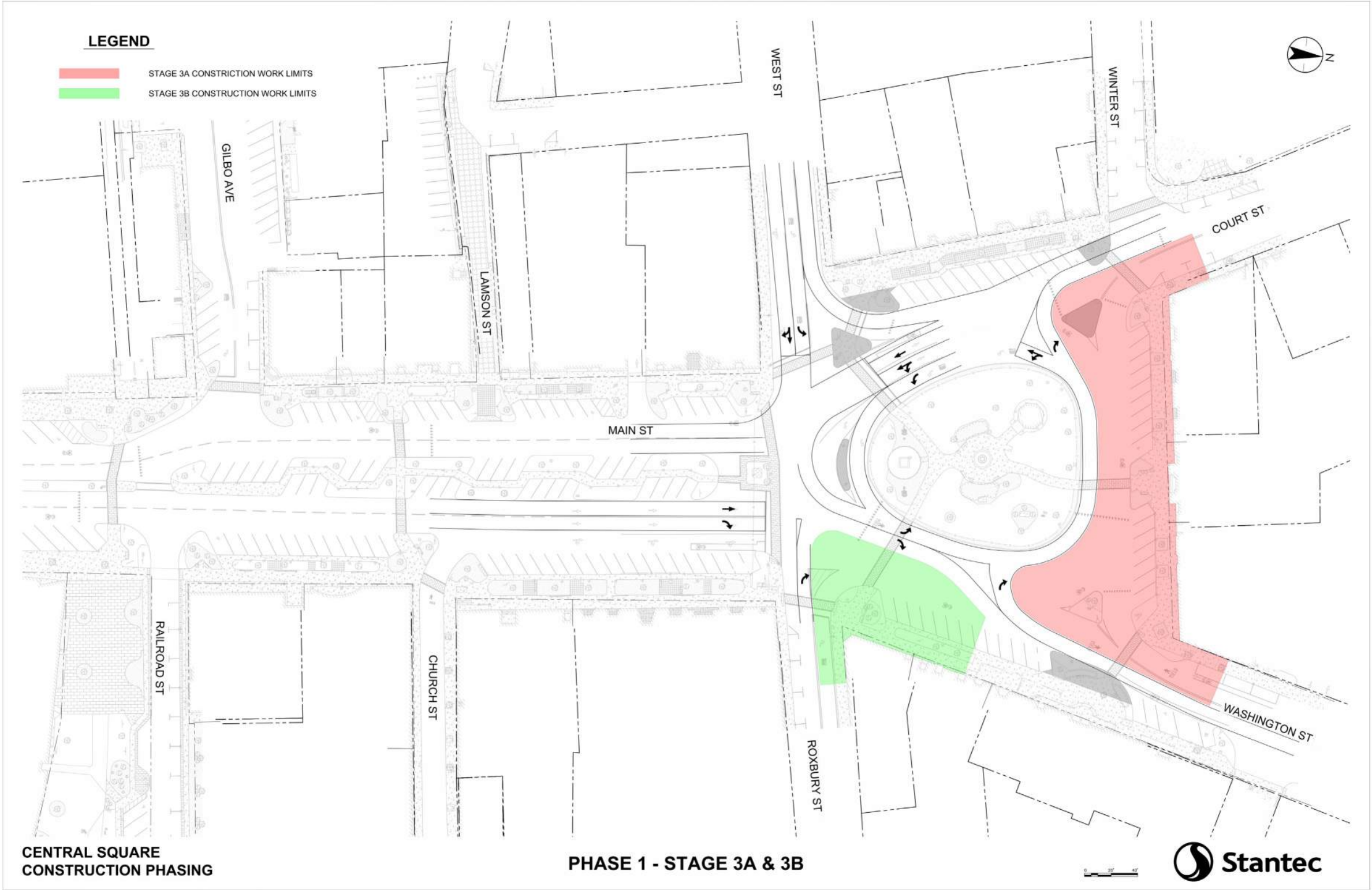


KEENE FINAL DESIGN | CENTRAL SQUARE
CONSTRUCTION PHASING



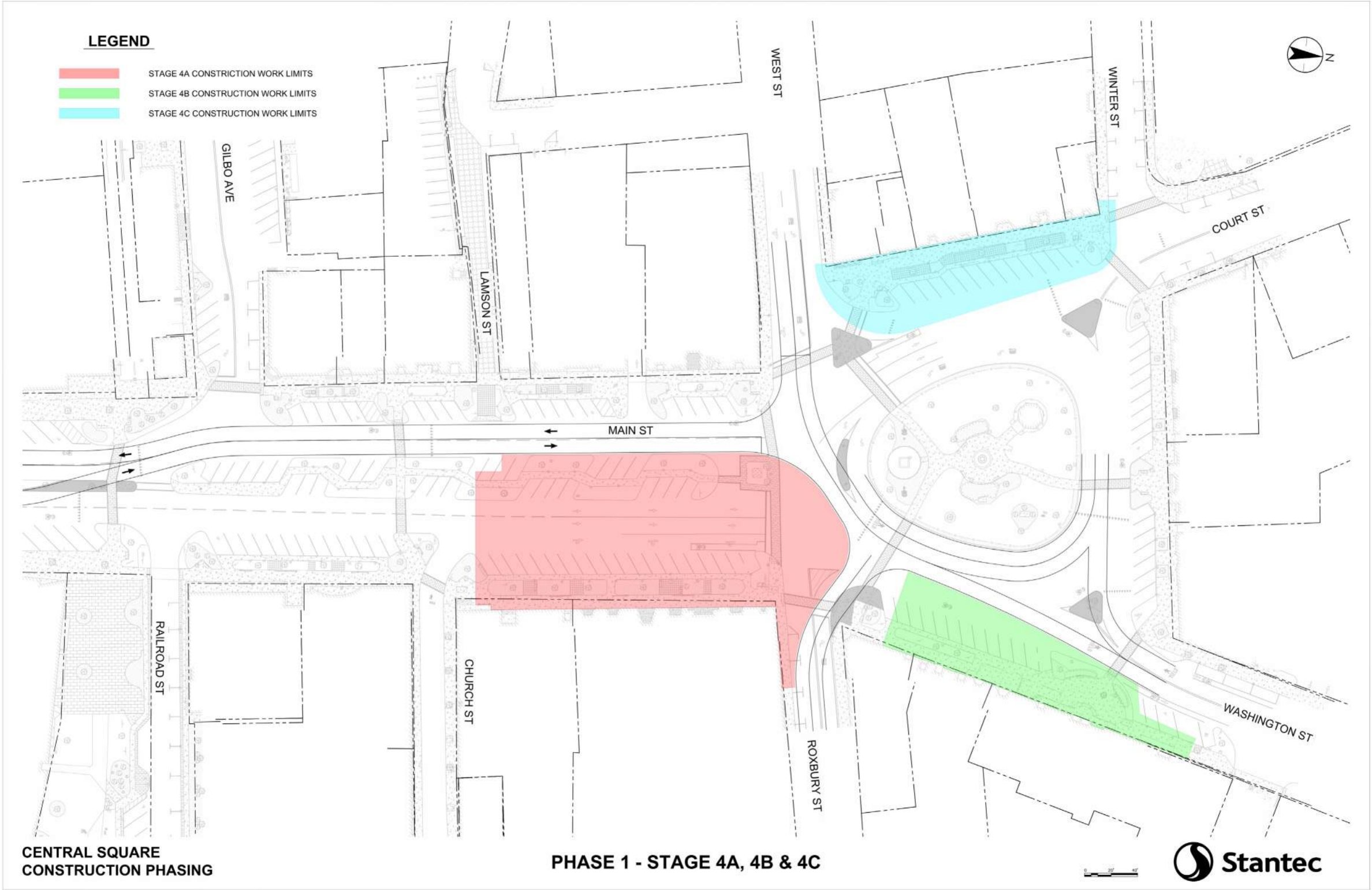
KEENE FINAL DESIGN | CENTRAL SQUARE

CONSTRUCTION PHASING

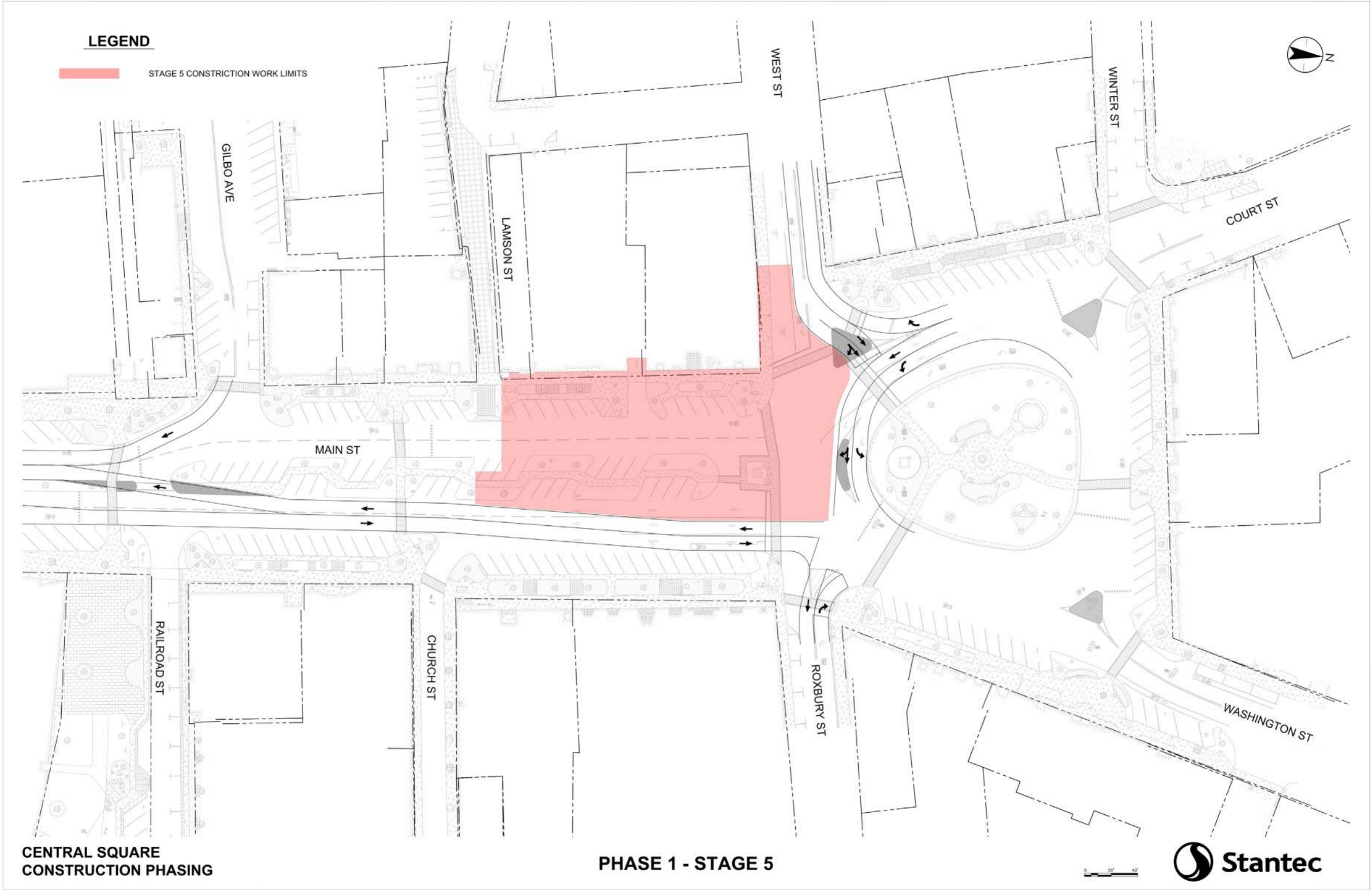


KEENE FINAL DESIGN | CENTRAL SQUARE

CONSTRUCTION PHASING

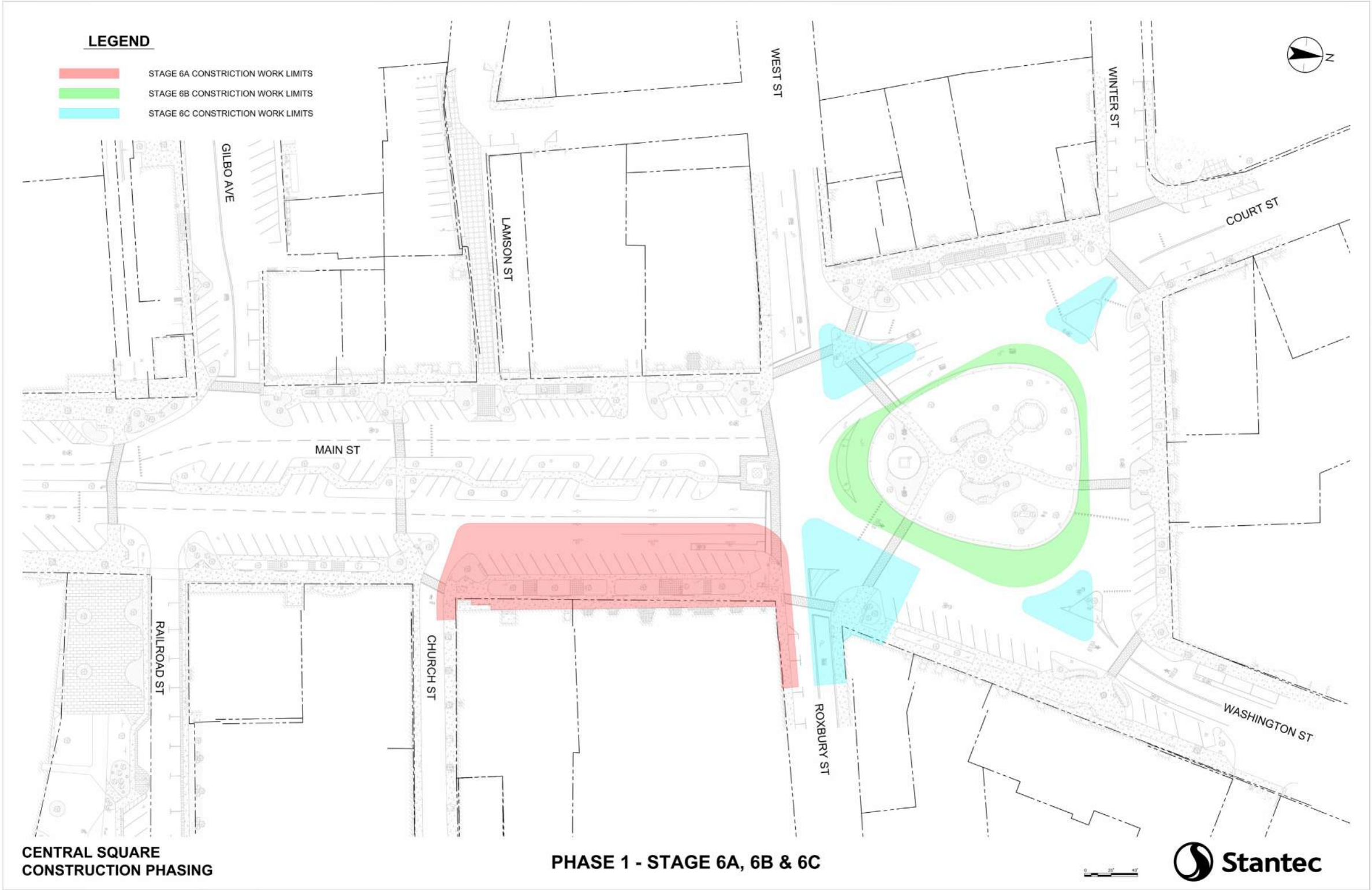


KEENE FINAL DESIGN | CENTRAL SQUARE
CONSTRUCTION PHASING



KEENE FINAL DESIGN | CENTRAL SQUARE

CONSTRUCTION PHASING



KEENE FINAL DESIGN | MAIN STREET STREETSCAPES

FOCUS ON TREES



The **Silva Cell** Supports vehicle loading equal to 32,000 lbs, which allows use in areas that accommodate 3 - 4 axle vehicles such as those used for emergency, delivery, and maintenance. Meets AASH-TO HS-20 (USA) loading standards when used with standard paving profiles.
 .Aug 7, 2017

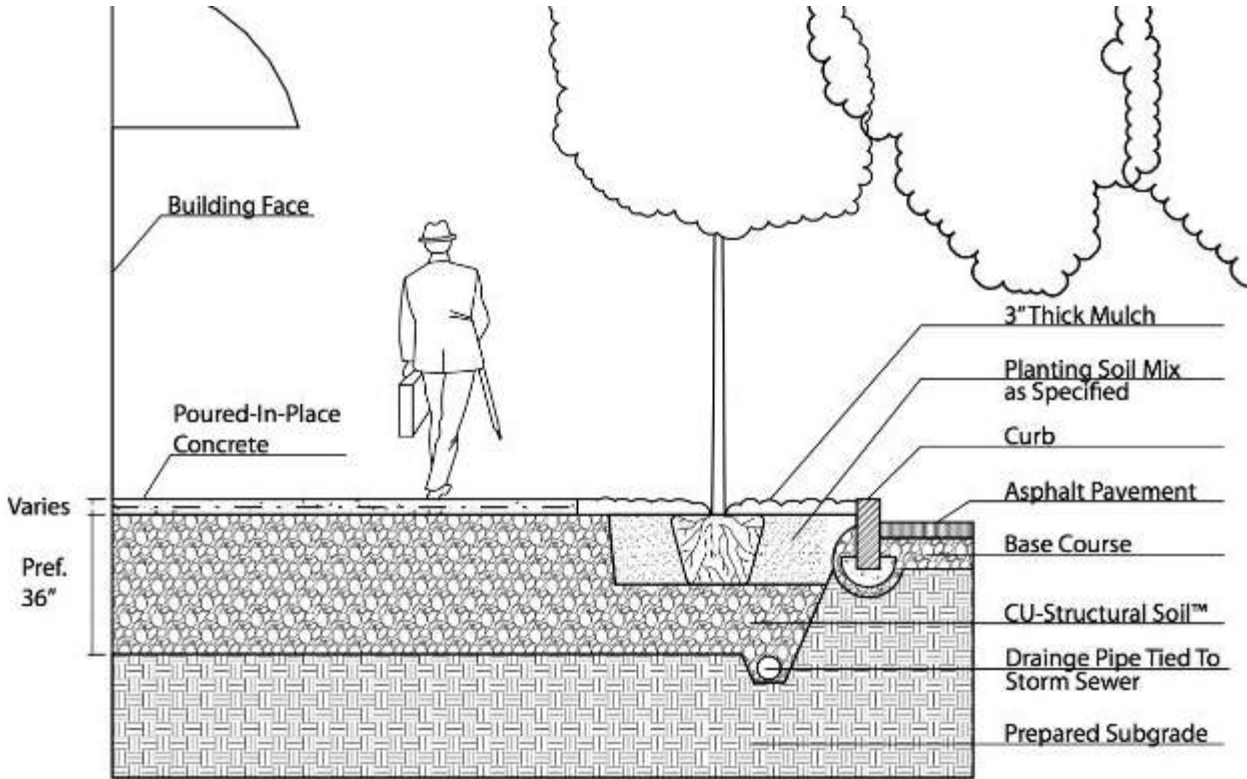
Traditional Planter

TYPICAL CAUSES OF FAILURES FOR URBAN STREET TREES

- COMPACTION
- HYDRATION (IRRIGATION)
- SOIL VOLUME

RECOMMENDATIONS

- SMALL TREE 300 CF
 - MEDIUM TREE 600 CF
 - LARGE TREE 1,000 CF
- (10 X 25 X 4' DEPTH)



Structural Soil consists of crushed stone with organic materials that fill the void areas. From a bearing load perspective, it is no worse than a standard City sidewalk and in many cases it's better.

KEENE FINAL DESIGN | GILBO AVE
PROGRAMMING MATRIX

ART/FARMERS' MARKET: 30-35 VENDORS | 3-6 TENTS



FOOD EVENT: 8-11 FOOD TRUCKS



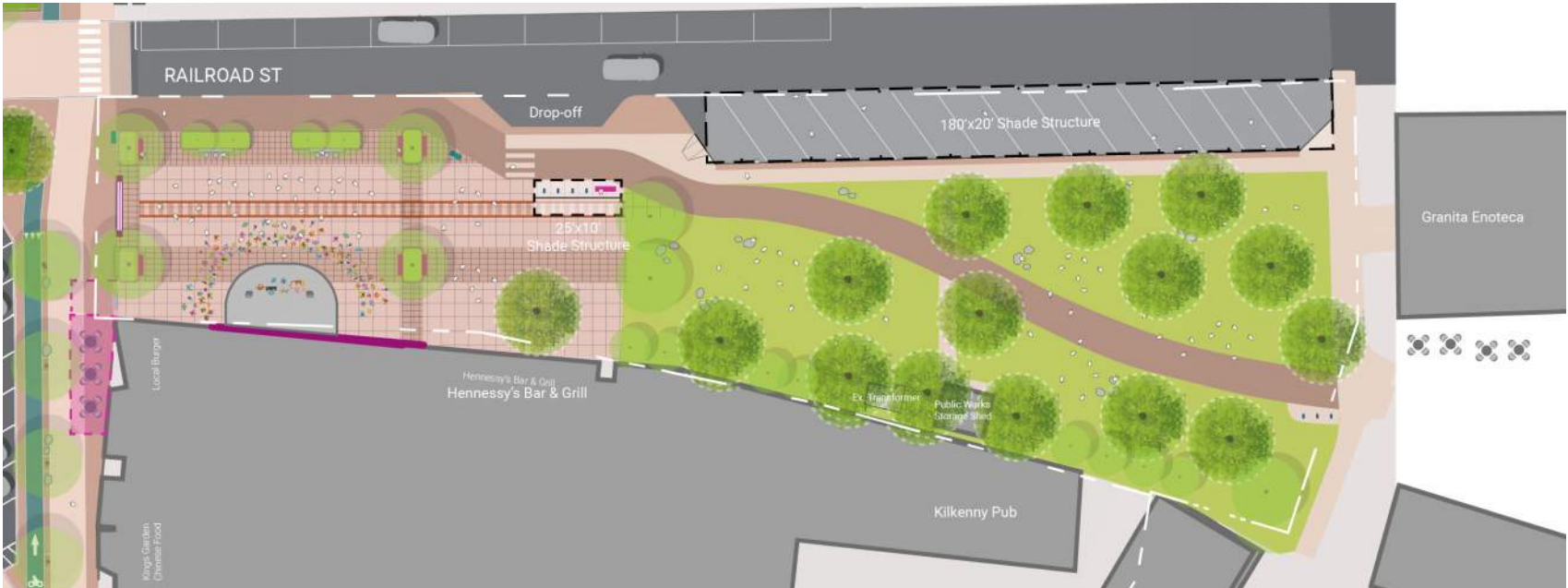
KEENE FINAL DESIGN | RAILROAD SQUARE

PROGRAMMING MATRIX

ART/FARMERS' MARKET: 30-40 TENTS | 40-64 VENDORS | 400-600 PEOPLE



PERFORMANCE: 400-600 STANDING/SITTING PEOPLE



FOOD EVENT: 5-8 FOOD TRUCKS | 400-600 PEOPLE



KEENE DOWNTOWN INFRASTRUCTURE IMPROVEMENTS PROJECT

FINAL DESIGN REVIEW

MSFI PRESENTATION

DECEMBER 18, 2024



KEENE FINAL DESIGN | MAIN STREET STREETSCAPES

DECISION MATRIX SUMMARY - MSFI PREFERENCE

SIDEWALK

Option 1 - Standard Concrete

Option 2 - Standard and Stamped Concrete Combo

Option 3 - Standard Concrete and Unit Pavers

BIKE LANES

Option 1 - Concrete with Integral Color (non-green color preferred)

Option 2 - Bituminous

RAISED CROSSING

Option 1 - Concrete for Railroad / Gilbo and Central Square

Option 2 - Bituminous for side streets

Crosswalk Marking: Stamped bituminous / concrete

Option 3 - Unit Pavers

BIKE RACKS

Option 1 - U-Rack

Option 2 - U-Rack with Opportunity for "Sponsored" Signage by groups or individuals

TRASH/RECYCLE

Option 1 - Treetop Products Trash Cans with Logo if Possible

Option 2 - Landscape Forms Poe Litter

HYDRANTS

Option 1 - All Red

Option 2 - Red and White

Option 3 - Yellow

Option 4 - Standard Hydrant painted Black with colored Bonnet

PLANTER CURBS

Option 1 - Vertical Granite

Option 2 - Vertical Granite with Railing

TREE WELLS

Option 1 - Permeable Pavers

Option 2 - Porous Resin Bound Paving

Match Existing Tree Cast-Iron Grates

Match Existing Open Plant Beds

TRAFFIC SIGNAL BASE

Option 1 - Washington Base with fluted poles

Option 2 - Raleigh Base

POWER PEDESTALS

Option 1 - 20A duplex / quad GFCI

Option 2 - 3 Styles of Outlet, no need for USB/C outlets

LIGHT BOLLARD

Option 1 - BEGA Light

Option 2 - US Architectural Lighting B100

Option 3 - US Architectural Lighting B1300

KEENE FINAL DESIGN | MAIN STREET STREETSCAPES

SURFACE TREATMENT - MSFI PREFERENCE

SIDEWALK

Standard and Stamped Concrete Combination



BIKE PATH

Concrete with Integral Color (non-green color preferred)



Painted Bike Lane Color



Integral Concrete Color

KEENE FINAL DESIGN | MAIN STREET STREETSCAPES

SURFACE TREATMENT - MSFI PREFERENCE

RAISED CROSSING

Concrete for Railroad / Gilbo and Central Square



Bituminous for side streets



*Crosswalk Marking:
Stamped bituminous / concrete*

KEENE FINAL DESIGN | MAIN STREET STREETSCAPES **SITE FURNISHING - MSFI PREFERENCE**

BIKE RACK

U-Rack with Opportunity for “Sponsored” Signage by groups or individuals



TRASH / RECYCLE RECEPTACLE

Treetop Products Trash/Recycle with logo if possible



KEENE FINAL DESIGN | MAIN STREET STREETSCAPES **SITE FURNISHING - MSFI PREFERENCE**

HYDRANTS

Standard Hydrant painted black with colored bonnet



PLANTER CURBS

Vertical Granite



KEENE FINAL DESIGN | MAIN STREET STREETSCAPES

SITE FURNISHING - MSFI PREFERENCE

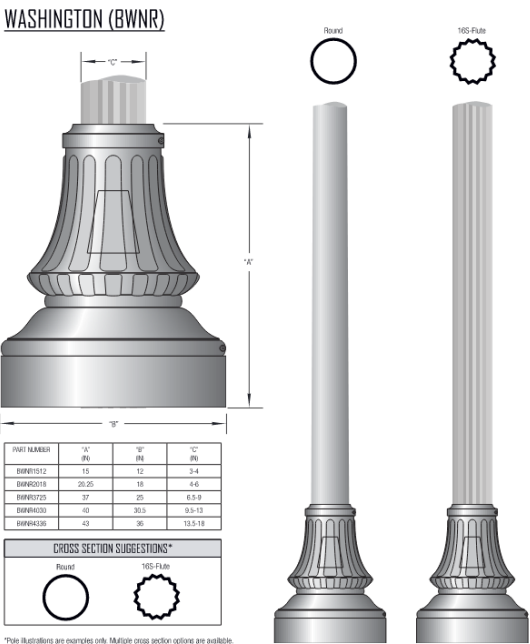
TREE WELLS

Cast-iron Tree Grate



TRAFFIC SIGNAL BASE

Washington Base with Fluted Poles



KEENE FINAL DESIGN | MAIN STREET STREETSCAPES **SITE FURNISHING - MSFI PREFERENCE**

Power Pedestals
3 Styles of Outlet, no need for USB/C Outlets



LIGHT BOLLARD
US Architectural Lighting B100



CATENARY LIGHTS

Option 1 - ML2000-CA

Option 2 - ML2000-CCCA

Bare Bulbs (with canopy / cage option as a bid alternative)

LEANING RAIL

Option 1 - Landscape Forms Jessie Rail

Option 2 - Brasco EclipsePerf

Remove from Scope

KEENE FINAL DESIGN | GILBO AVE STREETSCAPES
SITE FURNISHING - MSFI PREFERENCE

CATENARY LIGHT
Bare Bulbs (with canopy / cage option as bid alternative)



LEANING RAIL
Remove from Scope

KEENE FINAL DESIGN | RAILROAD SQUARE
DECISION MATRIX SUMMARY - MSFI PREFERENCE

PLAZA PAVING

Option 1 - Standard Concrete

Option 2 - Standard and Stamped Concrete Combo

Option 3 - Unit Pavers

RAILROAD TRACKS

Option 1 -Rail Road Tracks
(real steel tracks)

Option 2 - Corten

Option 3 - Interpretive

Option 4 - Paving

GATEWAY ARCH

Option 1 - Single Post with Brick Base, *consider metal arch with metal text like examples*

Option 1a - Single Post with Granite Base

Option 2 - Double Post with-Brick Base

COVERED STRUCTURE

Option 1 - Semi-Open Structure with Color

Option 2 - Structure with Louver System

Option 3 - Covered Structure
(with mix of gathering space and bicycle parking)

KEENE FINAL DESIGN | RAILROAD SQUARE

SURFACE TREATMENT - MSFI PREFERENCE

PLAZA PAVING

Standard and Stamped Concrete Combination



RAILROAD TRACKS

Rail Road Tracks (real steel tracks)



KEENE FINAL DESIGN | RAILROAD SQUARE SITE FURNISHING - MSFI PREFERENCE

GATEWAY ARCH

Single Post with Brick Base (consider metal arch with metal text like examples)



COVERED STRUCTURE

Covered Structure (with mix of gathering space and bicycle parking)



KEENE FINAL DESIGN | CENTRAL SQUARE
DECISION MATRIX SUMMARY - MSFI PREFERENCE

SURFACE TREATMENT

Standard Concrete with
Unit Pavers in Center

Stone Dust

Unit Paving

BENCH SEATING

Option 1 - Metal Bench

Option 2 - Wood Slat Bench

Option 3 - Wood Slat
Backless Bench

Option 4 - Stone Blocks

KEENE FINAL DESIGN | CENTRAL SQUARE
SITE FURNISHING - MSFI PREFERENCE

SURFACE TREATMENT
Standard Concrete



Unit Paving for Fountain Area



BENCH SEATING
Wood Slat Bench with Backrest



Backless Wood Slat Bench





CITY OF KEENE NEW HAMPSHIRE

ITEM #F.1.

Meeting Date: January 2, 2025
To: Mayor and Keene City Council
From: Patricia Little, City Clerk
Through:
Subject: Statement of Interest Filings - City Clerk

Recommendation:

Informational only.

Attachments:

1. Statement of Interest

Background:

Section 15 of the City Council's Rules of Order requires the annual filing of the Statement of Interest form by the Mayor and City Council. Although this Section is currently under consideration for possible amendments, the identified timeframe of January would suggest that the Council should complete the form now and if this section is modified by the City Council as part of its current deliberations, then a new Statement of Interest will be prepared for completion.



CITY OF KEENE STATEMENT OF INTERESTS

Pursuant to Section 15. of the City Council Rules of Order this form is required to be filed with the City Clerk on an annual basis by January 31.
This statement shall be available in the Office of the City Clerk for public inspection.

Full Name: _____

Elected Position Held: ☐ Mayor ☐ Ward Councilor ☐ At-Large Councilor

Primary Occupation: _____

A. Please list below the name and address of any entity you are employed by or from which you receive any money, property or other commercial or financial consideration. (Pecuniary Interest*)

B. Please list below the name and address of any (non-City) board, commission, State association or other entity you are a member of and whether or not you hold a leadership position in that organization. (potential "Personal Interest")**

_____	Leadership Role?	YES	NO
_____	Leadership Role?	YES	NO
_____	Leadership Role?	YES	NO
_____	Leadership Role?	YES	NO
_____	Leadership Role?	YES	NO

Signature of Filer: _____ Date Signed: _____

**A pecuniary interest is any private financial interest, whether in the form of money, property or other commercial or financial consideration, the primary significance of which is an economic gain to the Councilor (or immediate family) which is not otherwise available to the public generally ("Pecuniary Interest").*

***A personal interest is any interest of a Councilor in the outcome of an Issue which would provide a financial benefit to any individual, group, or organization in which the Councilor has an interest, and which would (or could be reasonably perceived to) inhibit the impartial judgment of, or decision on, the Issue by the Councilor ("Personal Interest"). Membership in an organization generally, and not in a leadership capacity, shall not be considered a Personal Interest.*

SECTION 15. VOTING AND CONFLICT OF INTEREST.

Every Councilor present when a vote is required shall state their vote except when the Councilor has a conflict of interest in the matter under consideration. A conflict of interest shall be defined to exist when a proposed action, decision, or discussion ("Issue") presented to the City Council for consideration, would affect the Councilor's pecuniary or personal interests. A pecuniary interest is any private financial interest, whether in the form of money, property or other commercial or financial consideration, the primary significance of which is an economic gain to the Councilor which is not otherwise available to the public generally ("Pecuniary Interest"). A personal interest is any interest of a Councilor in the outcome of an Issue which would provide a financial benefit to any individual, group, or organization in which the Councilor has an interest, and which would (or could be reasonably perceived to) inhibit the impartial judgment of, or decision on, the Issue by the Councilor ("Personal Interest"). Membership in an organization generally, and not in a leadership capacity, shall not be considered a Personal Interest. A conflict of interest shall be deemed to exist when a Councilor's spouse, parent, child, or other member of the Councilor's immediate family living in the same household ("Immediate Family") has a Pecuniary Interest in a proposed Issue. A Councilor with a conflict of interest on a Council agenda shall file with the City Clerk the written particulars of the conflict of interest for inclusion on the Council agenda. If the conflict becomes known to a Councilor during a meeting, the Councilor should immediately disclose the particulars of the conflict of interest. The question of whether or not a conflict exists will then be decided by a majority vote of the Councilors present. The Councilor who may have a conflict of interest shall not vote on the question of the existence of the conflict of interest. When a conflict of interest is determined by the City Council to exist, the member having the conflict shall be prohibited from participating in the discussion and the vote on the Issue. Except at a duly noticed public hearing, or a public meeting, in which the public is allowed to speak, no Councilor having a conflict of interest may discuss the Issue in which he or she has a conflict with any other Councilor in any other place or any other time. If a Councilor with a conflict of interest wishes to speak at a public hearing, or in a public meeting, the Councilor shall do so from the audience section of the meeting.

Any Councilor having reasonable grounds to believe that another Councilor has a conflict of interest may raise the issue on his or her own motion. The Mayor shall also be subject to the Rule on Conflict of Interest notwithstanding whether or not the Mayor is entitled to vote on an Issue. The question of whether or not a conflict of interest exists is subject to debate. The question will then be decided by the Council as set forth above.

The Mayor and Councilors shall file with the City Clerk in January of each year a Statement of Interests on a form prepared for that purpose by the City Clerk. The Statement of Interests shall identify for the Mayor and for each Councilor the person's employer, and for the Mayor and for each Councilor, any board, commission, organization, association, or other entity which the Mayor and Councilor is a member of, and whether or not the person holds a leadership position in that organization. The Statement of Interests shall be available in the Office of the City Clerk for public inspection.

(Amended 6-5-1975, 4-15-1976, 4-20-1978, 4-17-1980, 6-18-1981, 8-2-1984, 4-18-1991, 2-17-2005, 6-5-2008, 1-18-2018, 6-18-2020, 4-7-2022)



CITY OF KEENE NEW HAMPSHIRE

ITEM #G.1.

Meeting Date: January 2, 2025

To: Mayor and Keene City Council

From: Bicycle Pedestrian Path Advisory Committee

Through: William Schoefmann
GIS Coordinator

Subject: **Downtown Bike Rack Inventory - Bicycle Pedestrian Path Advisory Committee**

Recommendation:

Accept the Bicycle Pedestrian Path Advisory Committee's "Downtown Bike Rack Inventory" document as informational.

Attachments:

1. Bicycle Racks - For City Council UPDATED DEC24

Background:

The attached "Downtown Bike Rack Inventory" is an assessment conducted by Bicycle Pedestrian Path Advisory Committee Chair, Sam Jackson and reviewed by the BPPAC as a whole for the purposes of advising City Council on the current configuration and set up of bike racks in the downtown foot print. It also contains some preferred rack types and their ideal placement as recommendations.

At it's regular meeting on June 12, 2024, the Bicycle Pedestrian Path Advisory Committee reviewed motioned to share the document and work on the Downtown Bike Rack Inventory with MSFI and City Council. "Councilor Haas motioned to approve Chair Jackson's document with suggested edits as advisory information for the MSFI. Ms. DelaCroix seconded the motion and with no discussion, the motion was approved unanimously."

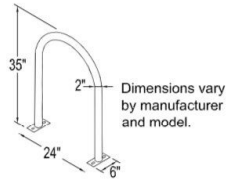


Keene Bike Racks

A tour through city-owned bicycle racks in
Downtown Keene, NH - 2024

BICYCLE RACK DESIGNS

PREFERRED "U Rack" DESIGN



ACCEPTABLE DESIGNS



Golden Triangle
BID Style



Downtown
BID Style



UNACCEPTABLE DESIGNS



This type of rack can bend the wheel.



This type of rack does not
support the bicycle frame
in at least 2 places.

RACK ELEMENTS

The rack must:

- Support the bicycle frame in at least 2 places, allowing the frame and wheel to be locked using a U-lock or cable lock.
- Prevent the wheel of the bicycle from tipping over.
- Not damage the bicycle.
- Be durable and securely anchored.
- Allow front-in or back-in parking.

Credit: Colorado Springs

District Department of Transportation
Bicycle Facility Design Guide

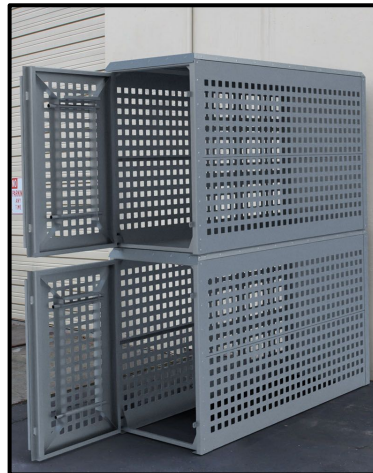
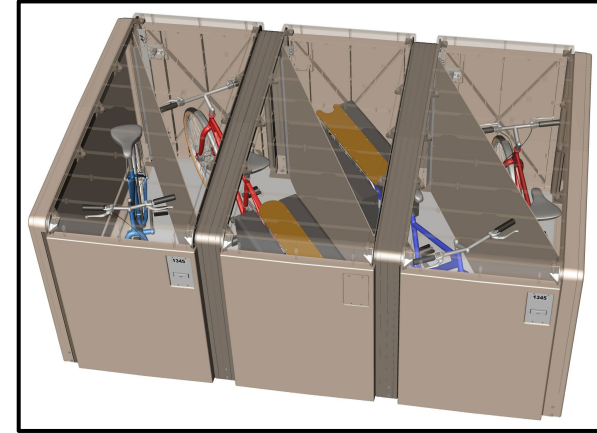
REVISED:
Dec. 2005
SCALE:
1" = 16"

26

BICYCLE LOCKERS

With the growing popularity of e-bikes, the price of bicycles is rising. Bike lockers offer a safe, convenient place to store bicycles out of the elements.

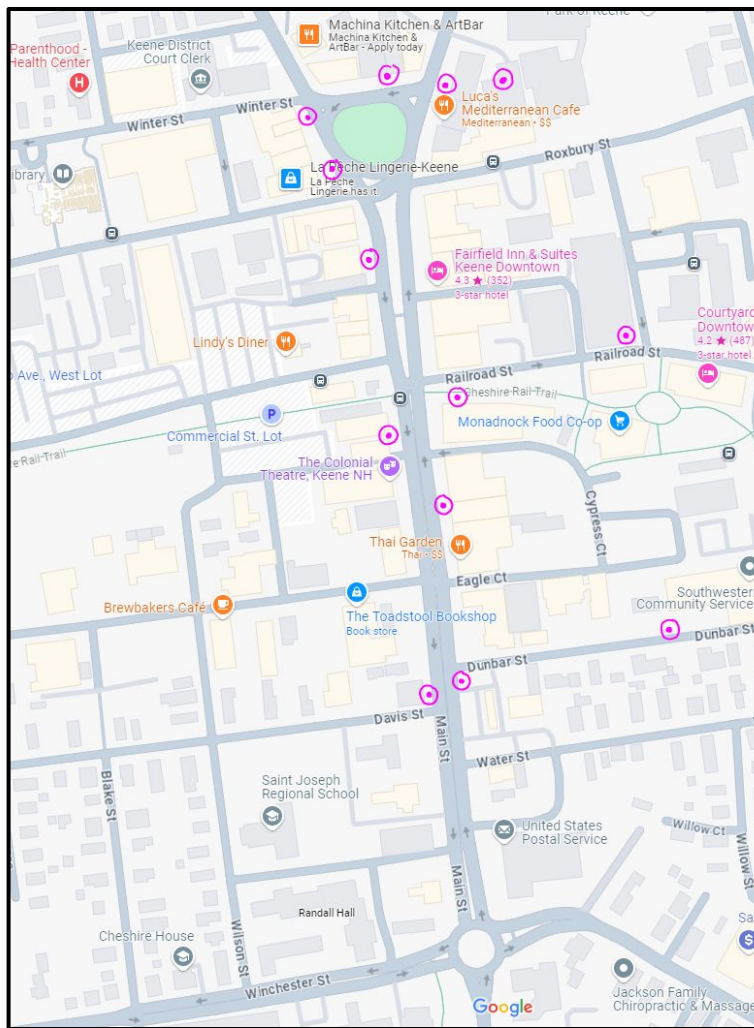
It is important to keep in mind some bikes tow small trailers, and additional space may be needed for some users.



Artistic Bike Racks

- Increase visibility
- Increase use
- Adds art into public space
 - Rack designs can be inspired by local heritage, character, and/or events
- Great way to tie in artists
 - Friends of Public Art
- May be able to seek grants

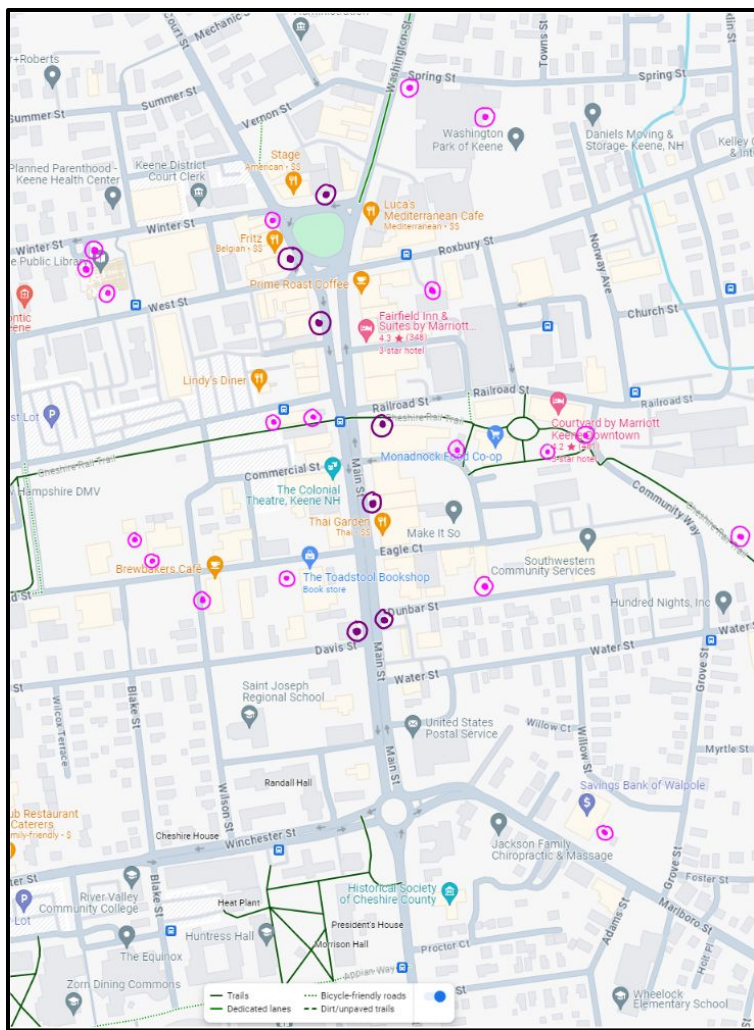




This map shows city-owned bike racks

Concerns:

- Bald Spots (lengths of the road without bike racks)
 - West side around Emerald St
 - South of Davis St
 - East side around Church St (widest portion of Downtown sidewalk)
- Quality
- Location
 - Short walking distance
 - High visibility (dissuade theft)



Acceptable Bike Racks (within about a 5 min walking distance from Downtown)

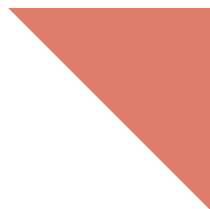
More bald spots*

- East Keene
- Open area in front of where Piazza used to be
- The square has only 1 ideal bike staple

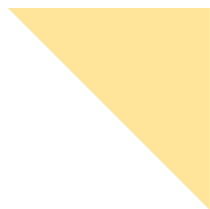
*Racks to fill bald spots for the summer in dark purple

Each example bears a colored flag for quick visual reference.

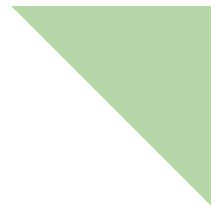
Check the top right corner of each slide.



Poor



Fair



Good



Excellent



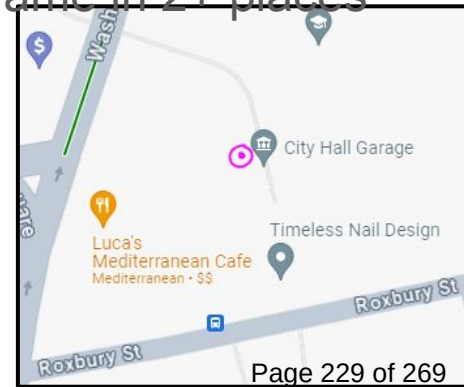
Location: Under City Hall Parking Deck
(Owned Keene Housing)

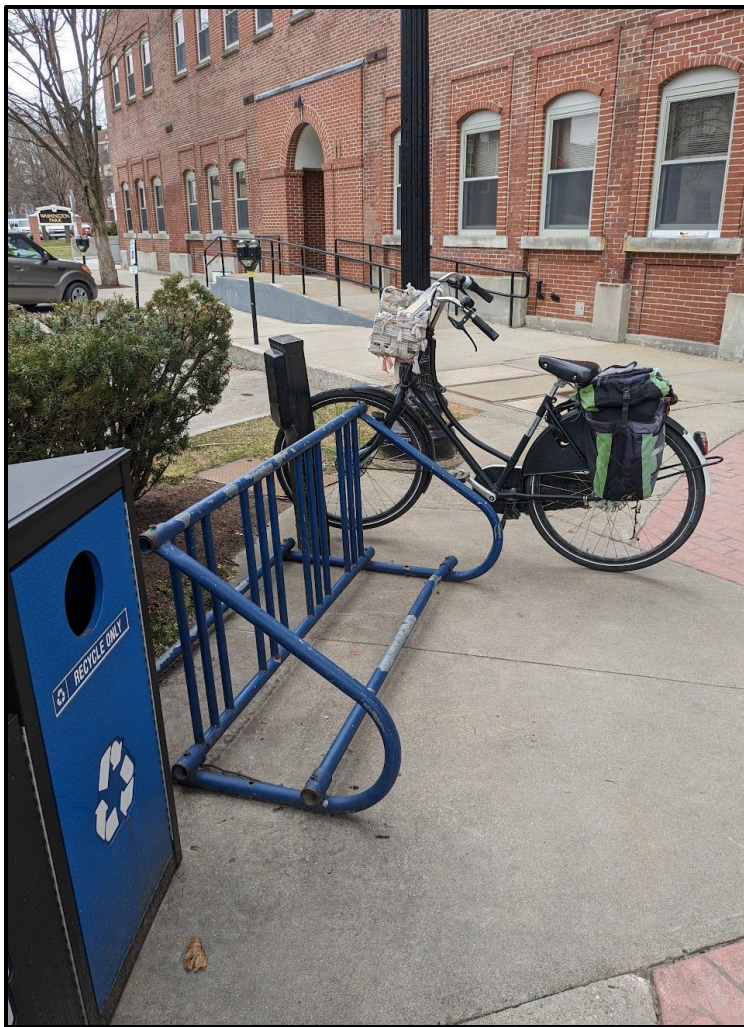
Pros

- Ok durability
- Accommodates many bikes

Cons

- Low visibility, low foot traffic
- Inconvenient location
- Does not support bike frame in 2+ places
- Can only lock through wheel (except end)
- Can Bend the wheel
- Allows bike to fall
- Mobile





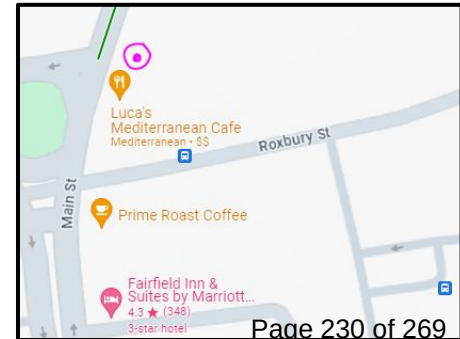
Location: City Hall

Pros

- High visibility, high foot traffic
- Convenient location
- Ok durability
- Can accommodate ~5 bikes

Cons

- Does not support bike frame in 2+ places
- Can only lock through wheel (except end)
- Can Bend the wheel
- Allows bike to fall
- Mobile





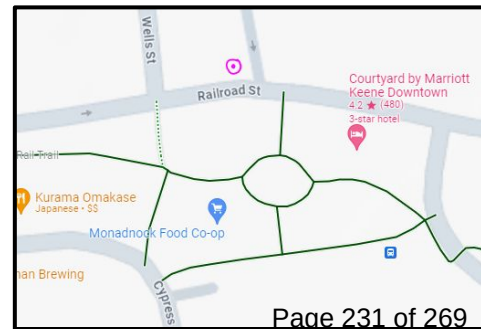
Location: Railroad/Wells St Parking Garage

Pros

- Convenient location, near downtown and railroad square
- Ok durability
- Accommodates several bikes

Cons

- Low visibility, low foot traffic
- Does not support bike frame in 2+ places
- Can only lock through wheel (except end)
- Can Bend the wheel
- Allows bike to fall
- Mobile





Location: Between Mon Amie & Margarita's

Pros

- Good visibility, high traffic
- Can allow locking through frame and wheel
- Convenient location
- Durable
- Can support bike frame in 2+ places

Cons

- Typical use does not support bike frame in 2+ places
- Allows bike to fall
- Mobile - *seasonal*





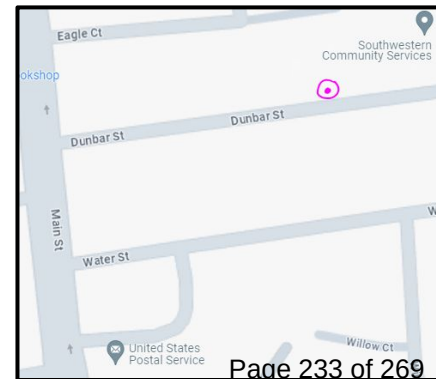
Location: Head Start Center

Pros

- High visibility
- Convenient location, close to co-op and downtown
- Supports bike frame in 2+ places
- Allows locking through frame and wheel
- Immobile - Fixed
- Good durability
- *Covered*

Pros

- Low foot traffic
- Only 2 staples, max 4 bikes if you're tricky





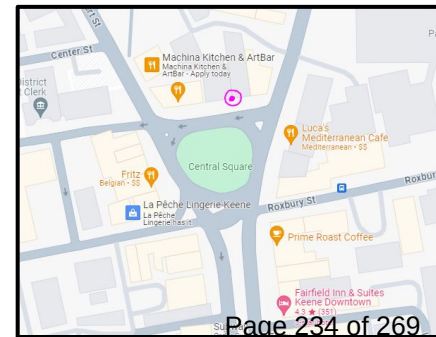
Location: United Church of Christ

Pros

- High visibility, high traffic
- Supports bike frame in 2+ places
- Allows locking through frame and wheel
- Convenient location
- Durable
- Accommodates up to 6 bikes

Cons

- Mobile - *seasonal*





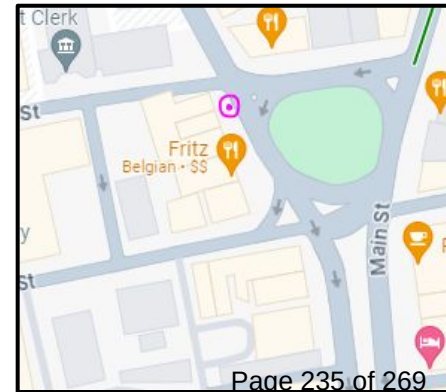
Location: Creative Ink - Downtown

Pros

- High visibility, high foot traffic
- Convenient location, downtown square
- Supports bike frame in 2+ places
- Allows locking through frame and wheel
- Immobile - Fixed
- Durable

Cons

- Accommodates 1 or 2 bikes if used properly





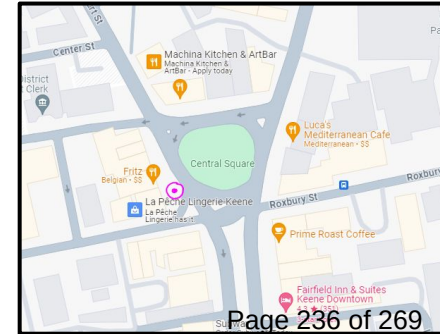
Location: Corner of West St & Main St

Pros

- High visibility, high traffic
- Supports bike frame in 2+ places
- Allows locking through frame and wheel
- Convenient location
- Durable
- Accommodates up to 6 bikes

Cons

- Mobile - *seasonal*





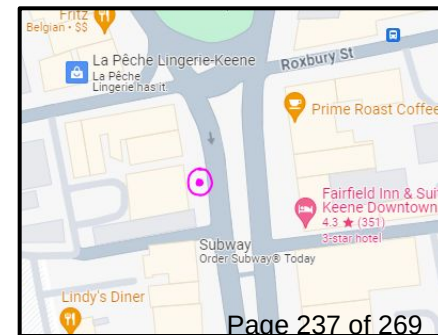
Location: Citizens Bank

Pros

- High visibility, high traffic
- Supports bike frame in 2+ places
- Allows locking through frame and wheel
- Convenient location
- Durable
- Accommodates up to 6 bikes

Cons

- Mobile - *seasonal*





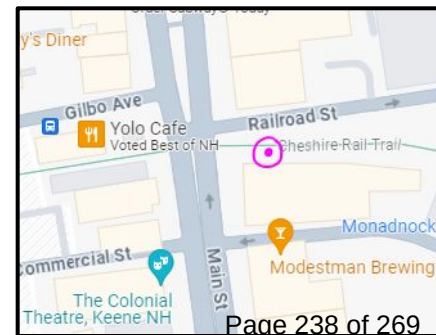
Location: Railroad Square

Pros

- High visibility, high traffic
- Supports bike frame in 2+ places
- Allows locking through frame and wheel
- Convenient location
- Durable
- Accommodates up to 6 bikes

Cons

- Mobile - *seasonal*





Location: Good Fortune

Pros

- High visibility, high traffic
- Supports bike frame in 2+ places
- Allows locking through frame and wheel
- Convenient location
- Durable
- Accommodates up to 6 bikes

Cons

- Mobile - *seasonal*





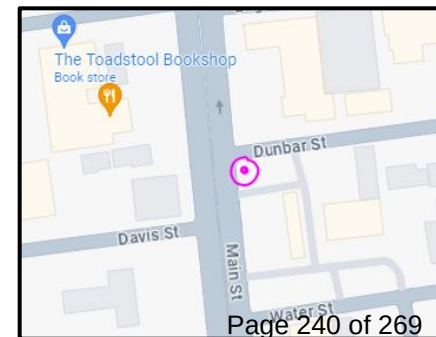
Location: Corner of Dunbar St & Main St

Pros

- High visibility, high traffic
- Supports bike frame in 2+ places
- Allows locking through frame and wheel
- Convenient location
- Durable
- Accommodates up to 6 bikes

Cons

- Mobile - *seasonal*





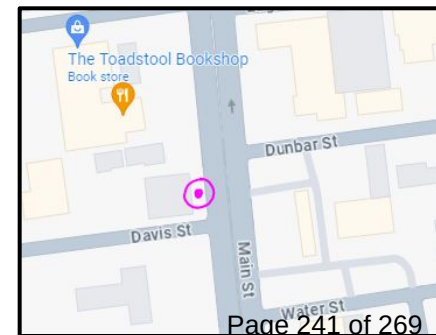
Location: The Old Piazza

Pros

- High visibility, high traffic
- Supports bike frame in 2+ places
- Allows locking through frame and wheel
- Convenient location
- Durable
- Accommodates up to 6 bikes

Cons

- Mobile - *seasonal*

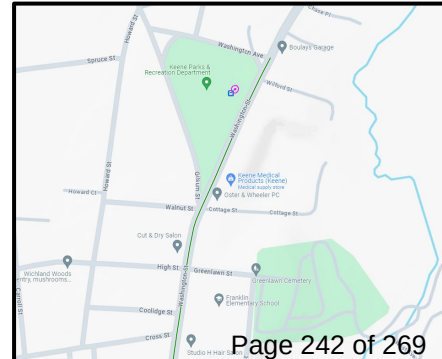




Location: Keene Rec Center

Pros

- High visibility and high foot traffic
- Convenient location (destination)
- Supports bike frame in 2+ places
- Allows locking through frame and wheel
- Immobile - Fixed
- Durable
- Accommodates 4-8 bikes
- *Covered*





CITY OF KEENE NEW HAMPSHIRE

ITEM #1.1.

Meeting Date: January 2, 2025
To: Mayor and Keene City Council
From: Elizabeth Fox, ACM/Human Resources Director
Through: Elizabeth Dragon, City Manager
Subject: **Relating to Class Allocation and Salary Schedule
Ordinance O-2025-01**

Recommendation:

That the City Council refer Ordinance O-2025-01 to the Finance, Organization, and Personnel Committee.

Attachments:

1. O-2025-01 Class Allocation & Salary Schedules Public Works

Background:

The ordinance relating to class allocation and salary schedules for administrative, office, technical, and management personnel proposes grade or title modifications to two existing positions in the Public Works Department.



CITY OF KEENE

In the Year of Our Lord Two Thousand and _____ Twenty-Five

AN ORDINANCE Relating to Class Allocation and Salary Schedules

Be it ordained by the City Council of the City of Keene, as follows:

That the ordinances of the City of Keene, as amended, hereby are further amended by deleting the stricken text and inserting the bolded text in Section 62-194, “Administrative, Office, Technical and Management Personnel” of Chapter 62 entitled “Personnel” as follows:

Sec. 62-194. Administrative, office, technical and management personnel

- S 4 Library Aide
- S 5 Minute Taker
- S 6 Administrative Assistant; Records Clerk
- S 7 Administrative Assistant I
- S 8 NO POSITIONS ASSIGNED
- S 9 NO POSITIONS ASSIGNED
- S 10 Audio Video Production Specialist; Recreation Specialist
- S 11 Office Manager; Parking Services Technician
- S 12 Librarian I; Planning Technician; Executive Secretary; Staff Accountant;
Purchasing Specialist; Human Resource Specialist
- S 13 NO POSITIONS ASSIGNED
- S 14 NO POSITIONS ASSIGNED
- S 15 Executive Assistant; Librarian II; Payroll Administrator; Human Resources Assistant; Youth
Services Manager; Engineering Technician; Assistant City Clerk; Senior Paralegal; Police
Dispatch Supervisor; Social Worker; Fire Department Administrator; Deputy Revenue Collector
- S 16 Planner; Laboratory Supervisor; GIS Coordinator
- S 17 Property Appraiser; Recreation Programmer; Librarian III; Airport Maintenance & Operations
Manager; IT Systems Specialist; Parking Operations Manager; Recreation Facilities Manager
- S 18 Purchasing Agent; Civil Engineer; Solid Waste Manager; Maintenance Manager; Revenue
Collector; Records Manager/Deputy City Clerk; Laboratory Manager; Human Services
Manager; Treatment Plant Manager; Deputy City Clerk; **Infrastructure Project Manager**
- S 19 ~~Transportation/Stormwater Operations Manager~~; Senior Planner, Recreation Manager
Fleet Services Manager, Accounting & Fund Manager; ~~Infrastructure Project Manager~~;
Highway Operations Manager
- S 20 Systems Administrator; Purchasing & Contract Services Manager; Assistant City Attorney;

Water/Sewer Operations Manager
S 21 NO POSITIONS ASSIGNED
S 22 NO POSITIONS ASSIGNED
S 23 NO POSITIONS ASSIGNED
S 24 City Engineer; Database Administrator; Building/Health Official
S 25 Assistant Finance Director/Assistant Treasurer; Assistant Public Works Director/Division Head;
Airport Director
S 26 City Assessor; Police Captain; Human Resources Director; Library Director; Deputy Fire Chief;
Parks & Recreation Director
S 27 IT Director; Community Development Director
S 28 Finance Director/Treasurer
S 29 Police Chief; Fire Chief; Public Works Director
S 30 NO POSITIONS ASSIGNED
S 31 Deputy City Manager
S 32 NO POSITIONS ASSIGNED

Jay V. Kahn, Mayor



CITY OF KEENE NEW HAMPSHIRE

ITEM #1.2.

Meeting Date: January 2, 2025
To: Mayor and Keene City Council
From: Patricia Little, City Clerk
Through:
Subject: Relating to Boards and Commissions
Ordinance O-2025-02

Recommendation:

That Ordinance O-2025-02 be referred to the Finance, Organization and Personnel Committee for their review and recommendation.

Attachments:

1. O-2025-02_Boards and Commissions

Background:

Ordinance O-2025-02 makes housekeeping changes to the membership of the Bicycle Pedestrian Path Advisory Board and the Conservation Commission. For the BPPAC, an ex-officio member from the City Council is being identified in the membership guidelines. This change recognizes the current composition of the Board. For the Conservation Commission, the ex-officio member from the City Council is being eliminated to bring the membership guidelines into compliance with State Law. The current Councilor serving on this Commission, will become a regular "public" member.



CITY OF KEENE

In the Year of Our Lord Two Thousand and _____ Twenty Five

AN ORDINANCE _____
Relating to Boards and Commissions

Be it ordained by the City Council of the City of Keene, as follows:

That the Ordinances of the City of Keene, as amended, are hereby further amended by adding the bolded text to Section 2-712 "Membership" of Division 5, "Bicycle/Pedestrian Path Advisory Committee" and deleting the stricken text in Section 2-771 "Membership" of Division 7, "Conservation Commission" of Article V. "Boards and Commissions" of Chapter 2 entitled "Administration" as follows:

DIVISION 5. BICYCLE/PEDESTRIAN PATH ADVISORY COMMITTEE

Sec. 2-712. Membership.

The bicycle/pedestrian path advisory committee shall consist of seven regular members. **One member shall be a city councilor.** All appointed citizens to the committee must represent a cross section of bicycling clubs, organizations and interests in the region.

DIVISION 7. - CONSERVATION COMMISSION

Sec. 2-771. - Membership

The conservation commission shall consist of seven regular voting members. ~~one of whom shall be a member of the city council.~~

Jay V. Kahn, Mayor



CITY OF KEENE NEW HAMPSHIRE

ITEM #1.3.

Meeting Date: January 2, 2025
To: Mayor and Keene City Council
From: Richard Wood, Fire Marshall/Building Official
Through: Elizabeth Dragon, City Manager
Subject: **Relating to Master Boxes
Ordinance O-2025-03**

Recommendation:

That Ordinance O-2025-03 be referred to the Municipal Services, Facilities and Infrastructure Committee for their review and recommendation.

Attachments:

1. O-2025_03_Master Boxes

Background:

This update will facilitate the City's decision to decommission the aging wired municipal fire alarm system known as the master box system. The update also streamlines the City fire alarm regulations to be consistent with the NH State Fire Code, as adopted.



CITY OF KEENE

In the Year of Our Lord Two Thousand and _____ Twenty Five

AN ORDINANCE _____
Relating to Master Boxes

Be it ordained by the City Council of the City of Keene, as follows:

That the Ordinances of the City of Keene, as amended, are hereby further amended by removing the stricken text in various sections throughout Division 3 “Fire Alarms” and inserting the bolded text; and deleting in their entirety Section 34-98, “Occupancies Requiring Connection,” Section 34-99, “Aerial Connection,” Section 34-100 Underground (Direct Burial) Connections,” Section 34-101 “Same-Underground (Buried Conduit) Connections,” Section 23-102, “Lighting Protection,” Section 34-103 “Grounding,” Section 34-105 “Responsibility,” Section 34-106 “Exceptions,” and renumbering of the remaining sections in Division 3 as follows:

Sec. 34-91. Standards.

All alarms installed in the City pursuant to this division shall conform to the standards set forth in, NFPA 72 National Fire Alarm Code ~~2016 Edition~~, NFPA 1 Uniform Fire Code, and NFPA 101 Life Safety Code, as adopted as **part of the State Fire Code in accordance with NHRSA 153:5 and administered** in Chapter 42 of this Code, entitled Fire Prevention and Protection. Additional requirements for the installation of alarm initiating equipment in the City shall be as provided in this division.

Sec. 34-92. General requirements for installation.

- (a) Before the installation or expansion of any ~~interior fire alarm system, master box, or street boxes for new rights-of-way is begun~~, the company responsible for the proposed system installation shall submit **a permit application with a** detailed set of plans, ~~blueprints~~, specifications, **calculations, material cut sheets**, etc., outlining the system and its components **and intended operation** to the fire department ~~marshal's office~~ for review and approval.
- (b) A permit shall be obtained from the fire department for the installation of any **fire alarm system or radio** master box. A fee as set forth in the schedule of fees in appendix B to this Code shall be paid upon application for the permit.
- (c) Installation of a knox box (key box) shall be required at all locations where a fire alarm system is being installed or is currently in use. Knox box shall be located next to the main entrance at the discretion of the fire department. Apartment buildings with more than two floors will require a key in the box for each floor and therefore require a larger knox box. Multiple building complexes shall have a knox box on each building in the complex for rapid entry of emergency personnel and **location** shall be approved by the fire department. Applications are available at the fire department.

- (d) ~~All fire alarm equipment shall be new and shall be furnished and installed by the owner of the property protected and/or by the developer of the new right-of-way.~~
- (d e) If trouble or faults develop in any part of a private system, it shall be the prerogative of the fire department to disconnect any part or all of the private system from the municipal circuits **or radio frequencies**. The owner or agent of the protected property shall be notified of the disconnection.
- (e f) ~~Any or all parts of existing fire alarm systems in a building undergoing renovation shall conform to the requirements for new installations.~~
- (f g) All installations shall conform to the requirements of **the state building code and state fire code as applicable, the adopted NFPA standards**, the International Municipal Signal Association (IMSA), or any applicable code in effect.
- (g h) Access to the protected property shall be made available to the fire department.
- (h-i) ~~Code wheel~~ **Box** numbers for all **radio** master boxes shall be **assigned and/or** approved by the fire department.
- (i j) A service charge per calendar year shall be assessed for each **radio** master box connected to the municipal **system** circuit. This shall include existing and new **radio** master boxes. New systems installed shall be charged a pro rata amount per month or part of a month, until ~~June~~ **December** 3 of the installation year, after which the annual fee will take effect on ~~July~~ **January** 1. The charges required in this subsection are as set forth in the schedule of fees in appendix B to this Code.

Sec. 34-93. ~~Supervisory Fire Alarm control~~ Control panel Unit (FACU).

- (a) ~~A supervisory control panel FACU shall include visual and audible annunciation be installed with the fire alarm system for the purpose of identifying location, acknowledging, resetting and/or disabling alarms. Keys for panel Panel locks, pull stations or other fire alarm system components shall be provided for installation in the knox box(s) servicing the location. eyed for "CAT-60" or "Simplex B" key.~~
- (b) The supervisory control panel shall, **at a minimum** feature the following:
 - (1) Zone/**address** indication **and description**.
 - (2) Alarm silence switch.
 - (3) System reset switch.
 - (4) Trouble buzzer and light.
 - (5) Trouble silence switch.
 - (6) ~~Ring back feature.~~ City bypass switch or soft key, when activated, disables transmission of all alarms to the radio box. **Radio box to transmit a supervisory alarm when city bypass is activated indicating off normal upon test.**
- (c) All controls shall be secured from use by **unauthorized** occupants of the protected property.
- (d) **Each installed fire alarm system will service no more than one building unless approved by the fire marshal. In no case will a fire alarm system serve more than two buildings unless all buildings served are physically connected.**
- (e d) ~~In an installation where the fire alarm system is installed in (i) more than one building or (ii) more than one floor, an annunciator panel shall identify the location of all originating signals. Normally, one zone per floor is adequate. The fire department may require more zones depending on building size, occupancy or hazard protected.~~ **Conventional zoned fire alarm systems in buildings greater than 2000 SF aggregate require independent annunciation for each floor. Where floor area exceeds 9999 SF, multiple zones will be required on that floor covering areas no greater than 7500 SF per zone. Sprinkler flow zone annunciation shall be by floor level as a minimum.**
- (f) An annunciator shall be required in a multi-zoned property near the main fire department access to the property **as approved by the fire department**. This may either be the alarm control panel or a remote annunciator panel with control functions. In an installation where an additional fire alarm system is installed in new building additions and connected to the existing approved system in the original building, an annunciator panel shall be installed on the inside of the new building addition or at a location designated by the fire department.

- (g e) The ~~supervisory control panel~~ **(FACU)** shall conform to the requirements of **the adopted edition of NFPA 72** and the following fire department requirements:
- (1) Access to the control functions of the alarm system by fire department, and alarm service personnel, **and site management personnel approved by the city fire marshal** only.
 - ~~(2) When the panel is indicating zone trouble, activation of a pull station shall initiate the alarm.~~
 - (2 3) Upon activation of a detector or pull station, the panel shall lock on the initiating circuit with audible and visual indication. Silencing the audible shall not cause **the visual notification devices nor the panel FACU** to reset.
 - (3) **All duct smoke detection shall active a non-latching supervisor signal upon activation and cause the affiliated ventilation equipment to be shut down.**

Sec. 34-94. Connection to municipal circuits - master box. (mechanical or electronic)

- (a) **Effective with the passage of this ordinance no additional master boxes will be permitted or added to the system.** Installations within 2,000 linear feet of the area served by the municipal alarm system but not requiring direct fire department notification under section 34-98 of this Code may be connected to this system by a master fire alarm box if direct fire department notification is desired.—
- (b) **Within 30 days of passage, all owners of property with a master box connected will be notified in writing effective January 6, 2026, at 10:00 AM, the city will no longer be maintaining or monitoring the municipal wired fire alarm system. All connected fire alarm systems will be required to be modified to utilize another approved monitoring method indicated in the adopted edition of NFPA 101. Such modification shall require a permit from the city fire marshal and shall be complete and functioning prior to 5:00 PM on January 2, 2026. The fire alarm master box for connection to municipal circuits shall be by Gamewell, either new or factory reconditioned, as approved by the fire department.**
- (c) — The master box shall be accessible year-round from a walkway or entranceway. (see exceptions)—
- EXCEPTION 1—** If a master box serves multiple buildings, a system of private roads and drives are required to access the property, a pedestal mounted box with remote annunciator shall be located at the entrance to the property, or, at the first road intersection in the development.—
- EXCEPTION 2—** If a master box serves multiple buildings and if access to the development is by a single road, the master box with remote annunciator shall be located on the outside of the first building approached providing no roadway intersections have been crossed prior to reaching this annunciator, and the building is not in excess of 35 feet from the curb line.—
- (d) The master box shall be mounted at a minimum of 42 inches and a maximum of 54 inches, measured vertically, from the finished grade to the activating handle or lever of the box.—
- (e) The master fire alarm box shall be of the local energy type with the following features:-
- ~~(1) Noninterference.—~~
 - ~~(2) Quick succession.—~~
 - ~~(3) Automatic grounding under open municipal circuit.—~~
 - ~~(4) Telegraph key (mechanical).—~~
 - ~~(5) Tap bell (mechanical).—~~
 - ~~(6) Lock and key (fire department specification).—~~
 - ~~(7) Code wheel index (fire department specification).—~~
 - ~~(8) Manual actuating lever.—~~
 - ~~(9) Timing one-half second.—~~
 - (10) **Shunt type boxes are not approved to be on the City of Keene Fire Alarm Circuits as of the adoption of this section. (Ref. NFPA 72 A.27.6.3.2.2.1(2))**

- (f) ~~Flush-mounted boxes shall be weatherproof.~~
- (g) ~~A red beacon strobe shall be mounted above the master fire alarm box. This light shall flash upon activation of the interior fire protection system. Installation of these units will be at the discretion of the fire department.~~

Sec. 34-95. Connections for radio box fire alarm system.

- (a) The entire system shall be installed according to the following: manufacturer installation requirements, per NFPA 72 and NFPA 1221.
- (b) The radio alarm box shall be SIGCOM DTX, 4 zone or 16 zone radio box or compatible to be received by the SIGCOM Vision 21 Receive Module and approved by the fire department. The box shall meet NFPA 72 and be Factory Mutual approved.
- (c) The radio alarm box shall be installed in the same location as the fire alarm control panel. If building size prevents the installation of the radio alarm box and FACP in the same location, due to radio antenna cable length, the fire department shall **may** approve an alternate location for the radio alarm box.
- (d) The fire alarm control unit (**FACU**) ~~panel~~ shall be connected to the radio alarm box **and programmed to activate the radio box transmission in accordance with the submitted and approved sequence of operation matrix.** ~~in such a way that when a zone is activated only the corresponding zone of the radio alarm box will be activated.~~ **At a minimum transmission shall include alarm, trouble, and supervisory signals.**
- (e) Radio alarm box zone assignments ~~will~~ **shall** be reviewed and approved by ~~made in consultation with the fire department~~ **the city fire marshal's office.**
- (f) The fire department will issue the radio alarm box number.
- (g) Radio alarm boxes shall be programmed to self-test **at a frequency required for compliance with the adopted edition of NFPA 73** ~~once daily.~~ The fire department shall ~~assign~~ **approve** the time of the daily test(s). The test time(s) will be listed on a sheet inside the radio box. **Any condition other than normal on the FACU shall cause the radio box to transmit a supervisory alarm indicating it is off normal upon test.**
- (h) Relay I/O boards are required for each zone in the radio alarm box.
- (i) ~~There shall be no means of disconnecting the fire alarm from the radio alarm box.~~ Any disconnection means preventing the alarm transmission may be approved in limited situations and at the sole discretion of the city fire marshal. Disconnection of the FACU transmission to the radio box will cause a supervisory signal to be displayed on the FACU and transmit a supervisory signal to the radio box.

Sec. 34-96. Radio alarm box antenna requirements.

- (a) Antennas for radio alarm boxes shall be installed according to the following: Manufacturer installation requirements.
- (b) Antenna location shall be determined during consultation with the fire department.
- (c) Antennas must be installed above the roof or flashing.
- (d) The antenna shall not be mounted within 20 feet of an air handling unit.
- (e) Antenna runs less than 100 feet shall meet or exceed RG213.
- (f) If an antenna cable run exceeds 100 feet, the contractor shall contact the distributor for an acceptable alternative solution.
- (g) A listed raceway ~~rigid aluminum~~ or galvanized steel conduit shall protect any antenna cable. ~~mounted outside.~~
- (h) A service box and weatherhead shall be installed at the antenna mounting location.

Sec. 34-97. Acceptance test.

- (a) The fire department shall inspect **and witness testing** and commissioning of the radio box system once installed.
- (b) ~~Once accepted, the radio alarm box shall not be opened by the installer, fire alarm system installer, sprinkler service contractor or by any other person.~~

- (b e) The fire department shall be contacted **when no city bypass key or switch is present**, to take the radio box offline when maintenance or repair is required to be performed on the radio box.

~~Sec. 34-98. Occupancies requiring connection.~~

The following occupancies, if new or being introduced where no such occupancy previously existed, shall have fire alarm systems connected to the fire department via the municipal alarm system if within 2,000 linear feet of the area served by the municipal alarm system or by way of radio alarm box. This requirement may be waived by the fire chief or his designee, if for technical reasons there is insufficient pole space to allow for municipal alarm system connection or the location does not allow for the use of a radio alarm box. If said waiver is granted, the installation shall employ an alternate monitoring system as approved by NFPA 72, as adopted. All waiver requests shall be made in writing to the fire department. All cost associated with a desired or required connection to the municipal fire alarm system shall be the responsibility of the property owner. Any occupancy that requires emergency forced notification shall submit an emergency call list to the Keene Fire Department on an annual basis with addresses and phone numbers where they can be reached 24 hours a day seven days a week.

- ~~(1) Assembly occupancies with occupant load of 300.~~
- ~~(2) Educational facilities with more than six students.~~
- ~~(3) Daycare centers with more than 12 clients.~~
- ~~(4) Hospitals, nursing homes, and limited care facilities.~~
- ~~(5) Detention and correctional facilities.~~
- ~~(6) Hotels, motels, and dormitories housing more than 16 persons.~~
- ~~(7) Residential board and care facilities with four or more occupants having a slow evacuation capability.~~
- ~~(8) Class A mercantile occupancies covered malls and covered mall buildings as defined by NFPA 101 Life Safety Code.~~
- ~~(9) Industrial occupancies with total capacity of 100 or more persons or if more than 25 persons are above or below level of exit discharge.~~
- ~~(10) Underground or windowless structures (excluding one or two family), occupied towers and high-rise occupancies as defined by NFPA 101 Life Safety Code.~~
- ~~(11) Any special hazard/extra hazard use or occupancy as determined by the fire chief and/or his designee.~~
- ~~(12) Apartment buildings four or more stories in height or housing 12 or more units.~~

~~Sec. 34-99. Aerial connection.~~

~~Standards for aerial connections to municipal fire alarm circuits shall be as follows:~~

- ~~(1) Provide a minimum of one-half inch EMT terminated with a weatherhead, located a minimum of 16 feet above the finished grade from the master box.~~
- ~~(2) Provide a utility grade eyebolt or similar approved device next to the weatherhead, properly secured to support the aerial cable.~~
- ~~(3) The maximum allowed span for aerial cable is 200 feet. For distances from the weatherhead to the utility pole exceeding 200 feet, additional poles will be required.~~
- ~~(4) Install two #12 AWG, THWN solid conductors from the master box to the weatherhead. These wires may not be the same color.~~
- ~~(5) The path for the aerial service may not cross over buildings or through trees. Branches shall be cut to provide clear spaces for the aerial cable.~~

~~Sec. 34-100. Underground (direct burial) connections.~~

~~Standards for underground (direct burial) connections to municipal fire alarm circuits shall be as follows:~~

- ~~(1) The connection shall be four conductor, #12 AWG solid conductor, shielded polyethylene jacket, ISMA certified, direct burial cable, in one unspliced length from the master box to the utility pole or splice box designated by the fire department.~~
- ~~(2) Provide rigid steel conduit from 12 inches below the finished grade to the master box as protection for the cable. A bushing shall be used at the end of the conduit to protect the cable.~~

- (3) Provide a sweep ell of rigid steel and one ten-foot length of rigid steel conduit at the utility pole.
- (4) Extend the cable up the pole using schedule 40 PVC electrical grade conduit to a height approximately 18 inches above existing telephone cables. Terminate it using a weatherhead.
- (5) Provide a schedule 40 PVC sleeve under all traveled ways, including walkways, parking lots, driveways and patios.
- (6) The cable shall be bedded in screened sand completely surrounding the cable, a minimum of six inches on the top, bottom and sides.
- (7) The minimum depth of the cable below the finished grade shall be 24 inches.
- (8) Provide aerial fire alarm pole splice block.

Sec. 34-101. Same -- Underground (buried conduit) connections.

Standards for underground (buried conduit) connections to municipal fire alarm circuits shall be as follows:

- (1) Provide an IMSA certified four conductor #12 AWG solid conductor polyethylene jacket duct cable installed in one inch minimum schedule 40 PVC.
- (2) Conduit shall be cemented at all joints.
- (3) Conduit shall be buried to a depth of 18 inches minimum below the finished grade.
- (4) Termination of the conduit at the master box shall comply with section 34-105(b).
- (5) Provide a sweep ell of schedule 40 PVC and one ten-foot length of rigid steel conduit at the utility pole.
- (6) Extend conduit up the pole and terminate it per section 34-105(d).

Sec. 34-102. Lightning protection.

- (a) Lightning protection for connections to the municipal fire alarm service shall be provided by the contractor consisting of a TII Model 317A located inside the master box.
- (b) The fire department will install Additional protection at the utility pole as required.

Sec. 34-103. Grounding.

- (a) The fire alarm box and the lightning arrester for connections to municipal circuits shall be grounded as follows:
 - (1) A common ground for both devices is acceptable.
 - (2) Ground wire shall not be run in the same conduit as fire alarm wire.
 - (3) An unenclosed no. 8 copper wire or equivalent shall be used to connect the ground terminal of the master box and/or street box to the suitable ground in order to provide mechanical strength.
 - (4) If enclosed in metal pipe, a no. 12 wire may be used.
- (b) Suitable grounds are as follows:
 - (1) Underground metallic water piping system.
 - (2) Ground rod not less than one-half inch in diameter and eight feet long driven into permanently wet soil.
- (c) The resistance of a ground connection shall not exceed 250 ohms.
- (d) Power company neutral conductors are not acceptable grounds.

Sec. 34-10498. Testing.

- (a) The fire alarm system and its components shall be tested, in its entirety, by the person responsible for the installation. This test shall be conducted in the presence of a member of the fire department prior to the connection of the **radio** master box. to the municipal circuit.
- (b) It shall be the responsibility of the owner of the protected property to completely test the fire alarm system once a year. This test shall be reported in writing to the fire department.
- (c) The owner/developer of any protected property connected to the municipal system by a **radio** master fire alarm box shall notify the fire department for disconnection prior to testing of the system.
- (d) All master boxes and street boxes shall be tested for operation no less than required by NFPA 72 by the fire department during regularly scheduled work shifts.

- (d e) If an owner or occupant of a protected property requests assistance from the Keene Fire Department in conducting fire drills after normal business hours a fee will be charged as set forth in the schedule of fees in Appendix B.

~~Sec. 34-105. Responsibility.~~

- (a) It is understood that the owner/developer of the property shall be responsible for all fire alarm line construction, whether aerial, underground, or Radio alarm box, from the fire alarm box to a fire alarm circuit designated by the fire department. This is to include all appropriate pole hardware and connection devices.
- (b) All costs of equipment and installation, including extension of the municipal service, shall be the responsibility of the owner/developer at the time of installation and connection to the municipal system.
- (c) Aerial extensions of the municipal service shall be installed by the fire department and shall be charged to the owner/developer on a time-and-material basis.
- (d) Underground extensions of the municipal service shall be installed in accordance with the specifications of the fire department by the owner/developer.
- (e) Upon completion of a satisfactory test of the fire alarm system by the fire department, the system shall be tied into the municipal fire alarm. No one shall make these tie-ins but the fire department.
- (f) After the tie-in is made, the new line then becomes the property and responsibility of the fire department.

~~Sec. 34-106. Exceptions.~~

It is intended that the requirements in this division provide a basis for providing a reliable, cost-effective means of meeting the protection goals of the city. It is expected that requests for clarification and for specific variances to this division may be made from time to time. Requests for clarifications and/or variances should be made in writing to the fire department. Every effort will be made by the fire department to provide solutions to individual problems. The fire department welcomes any input which may improve the system's reliability or provide an equal system at reduced cost. Such adjustments as may be made to this division will be made at the discretion of the fire chief.

~~Sec. 34-10799. Liability.~~

The city or any of its employees shall not, under any circumstances, be held liable for the failure of any of the equipment to operate during the transmission of a fire alarm to the fire department console. It is understood that the fire department will do all that is possible to render trouble free, reliable service.

~~Sec. 34-108. Disconnection.~~

- (a) ~~Fire alarm master boxes.~~ It shall be unlawful for any person to disable or alter the mode of operation of any fire alarm box connected with the municipal fire alarm system. If it becomes necessary for any user of the municipal fire alarm services to access any fire alarm box connected to the municipal fire alarm system in order to alter the mode of operation or disable any so-connected fire alarm box, application shall be made to the fire department.
- (b) ~~Penalties.~~ For penalties, see section 1-15 et seq. pertaining to penalties and citations for violations of this Code.

~~Sec. 34-109100. False fire alarms.~~

- (a) *Definitions.* The following words, terms and phrases, when used in this section, shall have the meanings ascribed to them in this subsection, except where the context clearly indicates a different meaning:
 - Accidental alarm* means any activation of an alarm system to which the fire department responds which is the result of an unintentional occurrence or mishap. This includes burned food, steam from showers, and good-faith assumptions of a fire condition.

False alarm means any activation of an alarm system to which the fire department responds which is not the result of a fire, emergency call for assistance, or accidental alarm. This includes alarms improperly or maliciously sounded or alarms that turn out to be groundless or system malfunctions.

- (b) *Prevention, payment of costs.* Any owner or lessee or person in control of property having an alarm system on the premises and any user of alarm services or equipment designed and installed with the intent of eliciting an emergency response shall pay to the city a service charge of \$100.00 for each and every false alarm to which the fire department responds after the initial response within a ~~10~~-30-day period. It shall be the responsibility of the property owner to correct any and all ~~issues~~ **problems** resulting in the activation of false alarms. If the fire department finds it necessary to disconnect an alarm device or system due to repeated activations, a fire watch may be ordered posted on the premises until such time that the protection provided by the system or device can be restored.
- (c) *Appeals.* Any alarm user, owner, or lessee may appeal false alarm service charges in writing to the fire chief ~~marshal~~ within ten days after receipt of the notice of the service charge. The fire chief may waive assessment of the service charge when, in their ~~his~~ judgment, reasonable attempts are being taken to discover and eliminate the cause of the false alarms.
- (d) *Liability.* The fire department shall take every reasonable precaution to ensure that alarms received are given appropriate attention and are acted upon with dispatch. Nevertheless, the fire department shall not be liable for any defects in the operation of alarm devices, for any failure or neglect to respond appropriately upon receipt of an alarm from such a source, nor for the failure or neglect of any person in connection with the installation and operation of alarms and systems.

Sec. 34-110101. System maintenance and testing.

- (a) ~~No one will be allowed access into an active master box except fire department personnel.~~ Systems shall be properly maintained in good working order. Systems shall be tested in accordance with frequency and methods as described in NFPA 72, as adopted. ~~The fire department shall be informed of the test prior to its performance.~~ Written documentation regarding test results shall be kept on file on the premises and forwarded to the fire department **when any deficiencies are noted.** Competent and trained individuals shall complete testing and maintenance.
- (b) Delete this section effective Jan. 6, 2026. Any person wishing to test the fire alarm or sprinkler system that is monitored by a master box must notify the fire department at least 24 hours before any test is conducted provided that the master box cannot be disabled at the fire alarm control panel. The master boxes must be plugged out by fire department at its convenience. The fire department may refuse to allow tests if busy with emergency calls.

~~(1) It shall be the responsibility of the party holding the fire alarm access permit to notify fire department before any service is done on alarm/sprinkler systems. It shall also be the party's responsibility to notify the fire department when work is completed.~~

(2) Any false alarms received without prior knowledge of the fire department are subject to fines per subsection 34-109(b) of this division and subject to permit suspension per subsection 34-111(b).

Sec. ~~34-111.~~ Fire alarm access permit required.

- (a) ~~Access to work on, disable or restore fire alarm systems connected to emergency force notification, excluding one and two family house whole warning fire alarm systems, shall be limited to authorized personnel who have acquired an alarm access permit. Said permits shall only be issued by the fire chief or his designee after an applicant has received and acknowledged that they have read and understand this fire alarm ordinance, have completed an alarm access permit application and have paid the annual permit fee as outlined in appendix B.~~
- (b) ~~Unless renewed, all alarm access permits shall expire on December 31 of current year.~~

~~In addition, alarm access permits may be revoked by the fire chief or his designee without refund of the permit fee, if in the opinion of the fire chief or his designee the permit holder has placed protected property at risk, caused three or more false alarms in one calendar year, or violated any other provision of this chapter.~~

Sec. 34-112102. Two-way radio enhancement systems.

- (a) All new buildings shall be tested for adequate radio coverage for emergency responders within the building. Radio coverage is defined as the ability to transmit and receive from the interior of the building to the command vehicle and the dispatch center. Radio coverage must also be capable of transmitting and receiving from portable to portable radios while operating inside the facility to all areas of the building including elevators, elevator lobbies, emergency and standby power rooms, fire pump rooms, areas of refuge, mechanical rooms, boiler rooms and inside enclosed exit stairways. The system installation and components shall also comply with all applicable Federal Regulations, including but not limited to, Federal Communications Rules (47 CFR 90.219), as specified in the NFPA Two-Way Radio Enhancement Systems. These communications have to reach a voter site.
- (b) An application and permit is required for installation of or modification to two-way radio enhancement systems and related equipment. A fee as set forth in the schedule of fees Appendix B to this Code shall be paid upon application for the permit.
- (c) Emergency radio coverage shall include emergency services dispatch frequency and three tactical operations frequencies for the Keene Fire Department, emergency medical services and one dispatch and one tactical frequency for law enforcement. All equipment shall allow communication in analog, digital and encrypted mode.

(1) The emergency frequencies that will be approved to use are as follows:

Channel Name	Personality Type	Receive Freq.	Receive PL Freq.	Receive PL Code
WQCV921	Cnv	159.450	136.5	4Z
TAC 1	Cnv	154.38500	136.5	4Z
TAC 2	Cnv	154.28000	136.5	4Z
TAC 3	Cnv	153.83000	136.5	4Z
KPD				
Main		155.2500		4Z
Tactical		153.9500		4Z

- (d) Buildings and structures which cannot support the required level of radio coverage shall be equipped with a radiating cable system, a distributed antenna system with FCC certified signal boosters, or other system approved by the fire chief or his designee in order to achieve the required adequate radio coverage.
- (e) The system shall be inspected and tested per NFPA 72 Two-Way Radio Enhancement Systems.
- (f) The building owner shall notify or expand the two-way radio enhancement system at their expense in the event frequency changes are required by the FCC or additional frequencies are made available by the FCC. Prior approval of a two-way radio enhancement system on previous frequencies does not exempt this section.
- (g) Agency personnel shall have the right to enter onto the property at any reasonable time to conduct field-testing to verify the required level of radio coverage.

Jay V. Kahn, Mayor



CITY OF KEENE NEW HAMPSHIRE

ITEM #1.4.

Meeting Date: January 2, 2025

To: Mayor and Keene City Council

From: Municipal Facilities, Services and Infrastructure Committee, Standing Committee

Through:

Subject: Relating to Installation of a Stop Sign on Jennison Street
Ordinance O-2025-04

Recommendation:

On a vote of 5-0, the Municipal Services, Facilities, and Infrastructure Committee recommends the City Manager be directed to draft an Ordinance adding a stop sign at the northernmost end of Jennison Street at its intersection with Foster Street.

Attachments:

1. Ordinance O-2025-04 Stop Sign on Jennison St

Background:

Bryan Ruoff, City Engineer, stated that similar to the previous agenda item, this is a request from the public. He continued that the Engineering Division looked at this intersection and determined that this request for a stop sign added on Jennison St. at the intersection with Foster St. at the northernmost end of Jennison was in fact warranted, based on the MUTCD. Specifically, it is warranted by Section 2B04-09B due to the obscured sightline at the intersection looking west towards eastbound traffic on Foster St. He showed visuals of the intersection from the overhead view and from left and right and oriented the Committee to the area. He continued that a fence on private property completely obscures the view of traffic coming eastbound on Foster St. Staff spent some time in this location and noticed some cars whip around that corner, and you cannot see anyone coming. Based on that and based on their engineering assessment in conformance with the MUTCD, staff recommends that the Committee recommend that the City Manager be directed to draft an Ordinance adding a stop sign at this location.

Chair Greenwald stated that the big discussion would be on the Ordinance. He asked if Committee members have any questions now. He asked if the City Manager or the City Attorney drafts this Ordinance. The City Manager answered the question with her mic muted.

Councilor Favolise made the following motion, which was seconded by Councilor Filiault.

The Municipal Services, Facilities, and Infrastructure Committee recommends the City Manager be directed to draft an Ordinance adding a stop sign at the northernmost end of Jennison Street at its intersection with Foster Street.

Chair Greenwald stated that again, the big discussion would really be at the Ordinance time, but the Committee seems interested. He asked if there was any further public comment, or if the Committee had anything further to say.

Councilor Favolise stated that he previously has been on the losing side of a vote related to stop signs at intersections, but this one makes perfect sense to him, due to the engineering setup. He continued that he does not think this is necessarily just a driver behavior problem. He does not know if speeding and reckless driving is a problem in this area as much as it is with some of the other four-way intersections the Committee has discussed. This looks like a “blind drive” kind of situation to him. He will wait to see what the Ordinance says when it comes back and talk more about it then, but he is definitely interested.

The motion passed with a vote of 5-0.



CITY OF KEENE

In the Year of Our Lord Two Thousand and Twenty-Five

AN ORDINANCE Relating to Installation of a Stop Sign on Jennison Street

Be it ordained by the City Council of the City of Keene, as follows:

That the City Code of the City of Keene, New Hampshire, as amended, is hereby further amended by adding the bolded text to the provisions of Section 94-321, "Stop Signs" in Division 5, "Specific Street Regulations" in Article IV of Chapter 94, entitled "TRAFFIC, PARKING AND PUBLIC WAYS" as follows.

Jennison Street for North bound traffic at the intersection with Foster Street.

Jay V. Kahn, Mayor



CITY OF KEENE NEW HAMPSHIRE

ITEM #K.1.

Meeting Date: January 2, 2025
To: Mayor and Keene City Council
From: Donald Lussier, Public Works Director
Through: Elizabeth Dragon, City Manager
Subject: **Relating to Appropriations for Tree Removal Work
Resolution R-2025-01**

Recommendation:

That Resolution R-2025-01 be referred to the Finance, Organization and Personnel Committee for their review and recommendation.

Attachments:

1. R-2025-01 Relating to appropriations for tree removal work

Background:

In July 2024, the City experienced a significant wind storm that caused damage to the Tanglewood Park, Dinsmore Woods and surrounding areas. A large number of trees on the vacant land between Sesame Street and Maple Avenue were damaged. Neighboring property owners requested that the City remove trees that are either unstable or could damage private property.

Over the last several months, the Engineering division has worked to confirm that the trees in need of removal are on the City-owned parcels. Access to the area is quite restricted, so we also worked with the City's on-call tree service to develop a plan for removal. Removing the damaged and dangerous trees will be done using a combination of cranes, where equipment access is available, and tree climbers where necessary.



CITY OF KEENE

In the Year of Our Lord Two Thousand and Twenty Five

A RESOLUTION Relating to appropriations for Tree Removal work

Resolved by the City Council of the City of Keene, as follows:

That the sum of Fifty Thousand Dollars and no cents (\$50,000.00) be and here is appropriated from the unallocated fund balance for the purpose of unplanned tree removal work in and around the Sesame Street / Clark Circle neighborhood.

Jay V. Kahn, Mayor



CITY OF KEENE NEW HAMPSHIRE

ITEM #K.2.

Meeting Date: January 2, 2025
To: Mayor and Keene City Council
From: Elizabeth Fox, ACM/Human Resources Director
Through: Elizabeth Dragon, City Manager
Subject: **In Appreciation of Merri E. B. Howe Upon Her Retirement
Resolution R-2025-02**

Recommendation:

Recommend the adoption of Resolution R-2025-02, In Appreciation of Merri E. B. Howe Upon Her Retirement.

Attachments:

1. R-2025-02 Howe Retirement

Background:

Ms. Howe retires from the Finance Department effective January 3, 2025, with 12 years of service.



CITY OF KEENE

In the Year of Our Lord Two Thousand and **Twenty-Five**

A RESOLUTION **In Appreciation of Merri E. B. Howe Upon Her Retirement**

Resolved by the City Council of the City of Keene, as follows:

- WHEREAS:** Merri E. B. Howe began her career with the City of Keene on September 4, 2012, as a temporary Database Analyst in the Information Technology Department; was selected as the Assistant Finance Director/ Assistant Treasurer as of May 12, 2014; was appointed by City Council as Interim City Treasurer effective August 2, 2018; and was promoted to Finance Director starting November 19, 2018; and
- WHEREAS:** As a Certified Public Accountant skilled and experienced in the world of finance, Merri's experience in IT to deploy Business Intelligence reports for the City's financial software system has given her a unique understanding of and familiarity with how its databases actually work, allowing her to implement more streamlined processes and to adapt quickly to the City's fast-paced, deadline-driven environment and its monthly business cycles and annual workflows; and
- WHEREAS:** An important member of the management team, Merri understands the needs of the extraordinary community she calls home and has been a strong partner in supporting the work of the Manager, the Council, and department leaders as they work to manage City resources and develop services, programs and projects that advance a strong and vibrant future for City of Keene; and, very customer focused, has been attentive to issues and positively responsive to all questions—setting the tone for all the divisions under her oversight; and
- WHEREAS:** Merri has carried out her role as leader of all that is money related by holding herself to high professional and personal ethical standards, acting impartially and independently in her duties, being enthusiastic about making positive change, regularly juggling projects and duties to meet deadlines, and believing in teamwork where everyone's contribution is valuable—leading the City to earn the *Certificate of Achievement for Excellence in Financial Reporting* for annual comprehensive financial reports, achieved every year she has been Finance Director, from the Government Finance Officers Association; and
- WHEREAS:** Not afraid of challenging situations and with the ability to continue moving forward while never getting overwhelmed, Merri oversaw with good humor upgrades to our previous antiquated financial software and has worked diligently to implement the variety of modules for our current financial software—always a challenge because of the uniqueness of some of the City of Keene's business operations; and
- WHEREAS:** Merri qualifies as a retiree when she leaves City employment on January 3, 2025, with more than 12 years of honorable service to the City;
- NOW, THEREFORE, BE IT RESOLVED,** that the City Council of Keene hereby extends its sincere thanks to Merri E. Blastos Howe for her dedication to the City of Keene and wishes her the very best through all her retirement years; and
- BE IT FURTHER RESOLVED** that a copy of this Resolution, properly engrossed, be presented to Merri in appreciation of her years of service to the City of Keene and the greater Monadnock community.

Jay V. Kahn, Mayor



CITY OF KEENE NEW HAMPSHIRE

ITEM #K.3.

Meeting Date: January 2, 2025

To: Mayor and Keene City Council

From: Municipal Facilities, Services and Infrastructure Committee, Standing Committee

Through:

Subject: **Relating to Keene Roadway Safety Action Plan of 2025
Resolution R-2024-44**

Recommendation:

On a vote of 5-0, the Municipal Services, Facilities, and Infrastructure Committee recommends adoption of Resolution R-2024-44, relating to the Keene Roadway Safety Action Plan of 2025.

Attachments:

1. R-2024-44 Relating to the Keene Roadway Safety Action Plan of 2025

Background:

Chair Greenwald asked to hear from staff.

Don Lussier, Public Works Director, introduced the consultants from VHB, Inc. He continued that he thanks the members of the Roadway Safety Plan Committee (RSPC): J.B. Mack, Laura Tobin, Autumn DeLaCroix, Debbie Bowie, Elizabeth Dragon, Erin Rourke, Frank Linnenbringer, Fred Roberge, Ockle Johnson, and William Lambert. The members gave a lot of time and their valuable insight and assistance to the consultants as they went through this process. He is very proud of the product they produced and pleased with their work.

Frank Koczalka and Phil Goff from VHB, Inc. introduced themselves. Mr. Koczalka stated that they were before the MSFI Committee in June to talk through the process they used for the action plan. He continued that they have submitted the Roadway Safety Action Plan to the City for approval.

Mr. Koczalka stated that he wants to begin by reiterating the Safe System Approach, which they had touched on before. The Federal Highway Administration came up with it. It recognizes human error. Previously, (the goal was) eliminating all traffic accidents. The FHA realized that is not possible, recognizing that humans make errors, to design safety measures around that. The Safe System Approach has six safe systems principles, and five system elements. It is repetitiveness. Combining safe roadways with safe speeds should create a safer situation. Also new is the proactive approach of sharing responsibilities for roadway safety, instead of waiting for accidents. It is the responsibility of the public, city officials, state officials, and everyone.

Mr. Koczalka stated that for the plan's goal, the RSPC looked at what the NH Department of Transportation (NHDOT) had developed for its Strategic Highway Safety Plan and moved it up a little. They talked about the number of fatalities and serious injuries. The goal is a 50% reduction by 2035, and to work toward 0 in 2045. It is an ambitious goal, but with the Action Plan and the strategic projects, they can see how it will work. The objectives are preventing crashes resulting in fatalities and serious injuries. They will promote the Safe System Approach, and engage partners and the public. It is a shared responsibility.

Mr. Koczalka continued that regarding the planning process they went through, they engaged the local leadership in and outside of Keene, and looked at the statewide safety initiatives. The NHDOT has developed a Strategic Highway Safety Plan. This plan for Keene aligns with the State's objectives. The screen shows critical emphasis areas, such as intersections, older drivers, and speeding. The planning process involved the RSPC and the Technical Advisory Committee that they met with. Those two groups really helped form the plan. It was a good process with a lot of good input.

Mr. Koczalka continued that regarding data analysis, VHB gets their data from the NH Department of Motor Vehicles. They looked at ten years of data, recognizing about 4,500 crashes in Keene. About 12% resulted in fatal, serious, or minor injuries. One of the big things that came out of their analysis was that 68% of crashes happened at intersections. Vulnerable users such as pedestrians and bicyclists are at intersections, so it is important to reduce those crashes at intersections. It could be as simple as improved lighting or as much as education. Part of the data analysis was looking at Keene's top 15 roadway segments that have a higher rate of fatalities or serious injuries.

Mr. Koczalka stated that Mr. Goff spearheaded the community engagement. They did the project website, which got the information out. They had over 500 respondents to the online survey, and over 1,500 comments and pins of improvements. A lot of information came into VHB, which was great. The online survey results, and input from public meetings and stakeholder meetings gave them other ways to look at why some things were not coming up in the data analysis. For example, is there a street that is or feels dangerous, but has fewer accidents because no one travels it? They took the public input, took the crash analyses, and developed strategies and actions. Five strategies kept coming up: improve safety for non-motorized road users; enhance lighting and signage; reduce conflicts at intersections; speed management; and plans, policies, programs, education, and multijurisdictional coordination. Regarding that last one, they looked at the Complete Streets plan that Keene had developed and other programs that Keene had established, and looked at where those could be aligned with the Safe Systems Approach. They wanted to add that to the plan, especially education, which sometimes gets missed. He thinks Keene does a great job with social media, which they should keep going with, as they have many roundabouts and many improvements going on.

Mr. Koczalka continued that next was taking all of that information and developing project recommendations. Mr. Goff helped develop the evaluation criteria. They had over 190 project recommendations, developed from all of the input they got. It is a big list to go through, but it is a diverse group of bicycle roadway improvements and more. It was not for one location or one aspect; it really included everything. They wanted to make sure they had a comprehensive list of evaluation criteria, such as crash data, equity, community support, and so on and so forth. The report has a big spreadsheet/database outlining everything they saw, to give the City a way to work on and make improvements when necessary.

Mr. Koczalka continued that projects come down to funding. Thus, they have the implementation resources. Safe Streets for All is where this all started. In addition, the NHDOT has the Congestion Mitigation Air Quality Program, the Transportation Alternatives Program, and others. Over time,

there is other funding, such as grants popping up. There are other ways to go through the resources and pull that.

Finally, Mr. Koczalka continued, there is the care and maintenance. The VHB has developed the plan but it is a living document, made so the City can continue to build on it. They can look at how projects are being completed, what the benefits of the projects are, and more, like how to incorporate data collection and evaluation to keep the plan going. Public reporting and public education (is another piece. The City wants to be up front and transparent, and to get the message out to the public that things are working.

He continued that the biggest part, which they have in the report, is that it is a living document that will continue to be updated and refined as new data, new projects, and new technologies become available. That is key. This iterative process not only keeps the plan responsive to emerging trends and innovations, but also ensures that new insights and community feedback are continually integrated. There will be new residents, new plans and projects, and some other area that needs to be addressed or looked at. The plan remains dynamic, adapting and evolving to the safety challenges and opportunities to better achieve the goal of zero roadway fatalities and serious roadway injuries by 2045.

Mr. Lussier stated that he wants to speak to how Public Works will use this document going forward. He continued that they are looking at this as a reference document. Realistically, the City will still be working on some of these 190 recommendations when he retires. It will take a long time. It will be a document Public Works can reference as they are doing projects, such as looking to see if they can include any of these improvements while they are doing an infrastructure project, or if there are CIP projects coming up, how that can get included. Mr. Koczalka mentioned grant opportunities. Some of these improvements will be natural fits for different grants. They will look for those opportunities. He will plan on coming back and reporting on this to the MSFI Committee about once a year. Lastly, he wants to highlight that the vast majority of the 190 recommendations came from the public. They did a lot of outreach, and the VHB team took all of that feedback, and combined similar recommendations, as there was a lot of overlap. The vast majority came from Keene residents, which he thinks is great.

Councilor Favolise stated that he read the whole draft plan, and it was a lot of information to take in in 48 hours. He continued that something that stuck out to him was that 42% of the crashes with injuries were directly related to driver behavior, such as impaired driving, speeding, or distracted driving. This has been a frequent conversation at MSFI Committee meetings lately. There is a significant education and awareness component to this. That is the job of City staff and the job of everyone in the community, to hold each other accountable for our behaviors in the car. It was a sobering number to see. The Public Works Director said earlier that there is no engineering solution to human behavior. These projects will help one kind of traffic problem, but the driver behavior issue remains, so he was happy to see the emphasis on education.

Councilor Favolise continued that one of the recommendations was limiting the right-turn-on-red opportunities in Keene. He looked through the plan and did not see granular data on how many crashes they could tie to a right turn on red. He asked if granular data is available for that.

Mr. Koczalka replied that when crashes are reported, either the State or the City officers fill out the crash reports. He continued that the reports are not as robust as they would hope. That was something they noted as they went through this process - how crash data can be recorded more accurately or in greater detail. VHB does not have access to information about the type of crash, such as a rear end or side swipe. That information is in the crash reports, but VHB does not get that information; they get the database. They would have to request all of the crash reports and have

them redacted. He wishes they could have that data, as it would be helpful. Other states collect that data.

Mr. Lussier stated that what Mr. Koczalka is getting at is that it is a legislative concern here in the state. He continued that he understands the privacy concerns, but at the same time, the Department of Safety has this database of information that would help practitioners in the field save lives, but State law does not allow them to share that information with (those practitioners). That is problematic. Everyone in NHDOT understands the issue, but it will take a legislative action to fix.

Councilor Tobin stated she was initially really excited to be on the RSPC, because she thinks a lot about pedestrian safety on the roadway and thought she would be able to contribute a lot. She continued that as it turns out, she learned so much through this process. It stimulated so many conversations. Asking people to take the survey led to many conversations at her workplace about roadway problems, which she brought back to the RSPC. The RSPC really grappled with the issues, and there was a constant striving to find opportunities for improvement. She echoes what Mr. Koczalka said about this being a living document. That is really valuable. Guidelines will change. For example, recently there was a change in guidelines about flashing beacons. It was exciting to see that many of the projects that came up as priorities were already in the works. She is excited about this plan.

Chair Greenwald asked if members of the public had any questions or comments. Hearing none, he thanked the consultants and the RSPC for their incredible work and the tremendous report.

Councilor Favolise made the following motion, which was seconded by Councilor Filiault.

On a vote of 5-0, the Municipal Services, Facilities, and Infrastructure Committee recommends adoption of Resolution R-2024-44, relating to the Keene Roadway Safety Action Plan of 2025.



CITY OF KEENE

In the Year of Our Lord Two Thousand and Twenty Four

A RESOLUTION Relating to the Keene Roadway Safety Action Plan of 2025

Resolved by the City Council of the City of Keene, as follows:

WHEREAS: The City received a grant from the Federal Highway Administration funding the creation of a comprehensive roadway Safety Action Plan; and

WHEREAS: On December 7TH, 2023, the Mayor appointed the ad-hoc Roadway Safety Plan Committee and charged the Committee with overseeing the development of the Plan and making a recommendation to the City Council with respect to adoption; and

WHEREAS: The Committee conducted seven public meetings between January and November of 2024, and participated in numerous meetings with community stakeholders; and

WHEREAS: On November 25, 2024, the Committee voted unanimously to refer the draft "Keene Roadway Safety Action Plan of 2025" to the City Council with a recommendation to adopt by resolution; and

WHEREAS: The Plan establishes a goal of reducing roadway fatalities and serious injuries by 50% by 2035 and achieving zero fatalities and serious injuries by 2045.

NOW THEREFORE BE IT RESOLVED that the Keene City Council hereby adopts the Keene Roadway Safety Action Plan of 2025 and directs the City Manager to incorporate the recommended strategies into City transportation projects as opportunities allow.

Jay V. Kahn, Mayor