WEST WINDSOR PRINCETON JUNCTION STATION AREA VISION PLAN

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TABLE OF CONTENTS

I. Executive Summary

I. EXECUTIVE SUMMARY

Introduction: The "Vision Plan" Process

This report is the product of a collaboration between NJ TRANSIT, NJ Office of Smart Growth, and West Windsor Township to develop a vision for transit-friendly development around the West Windsor Princeton Junction Station Area. The vision described herein is not the plan of any single entity, but rather is an attempt at a consensus vision for long term change around the station, as well as the Township of West Windsor as a whole.

It is important to note that this Vision Plan constitutes the first in a series of steps the Township will take to transform the station area and surrounding properties into a vibrant community place.

The primary objectives of the study were to:

1. Brainstorm about the future of the area;
2. Look at opportunities presented by the existing site conditions, and other proposed projects affecting the area;
3. Establish the framework of public places and infrastructure;
4. Develop site organization principles;
5. Establish the site boundaries, and scope of development.

The Vision Plan was produced in ongoing dialogue with the Mayor and staff, a local Project Advisory Committee, and two open public meetings. These outreach efforts were coincident with ongoing outreach as part of a study commissioned by NJ TRANSIT to ascertain the feasibility of a Bus Rapid Transit (BRT) system along the Route 1 Corridor, which could serve, among other destinations, the Princeton Junction Rail Station.

Illustrative Site Plan of the Completed Vision

I. EXECUTIVE SUMMARY

As one of the ten busiest train stations in the United States, West Windsor's Princeton Junction Station is one of the key facilities in NJ Transit's commuter rail system. Princeton Junction's average weekday boarding ridership during FY04 was 6,865, making it NJ Transit's highest volume station along the Northeast Corridor, besides Newark and Trenton which are Terminal stations. Significant sprawl development in the area, coupled with increased traffic around the station and along the Route 1 Corridor have overtaken the area's infrastructure.

In addition, several major public and private initiatives, including potential for a new Bus Rapid Transit system, and the creation of a major new connector road, Vaughn Drive, promise to usher in a new era of change for the area.

The Vision Plan for the 70-acre area around the station establishes West Windsor Station's position as a major intermodal center for central New Jersey. The plan:

1. Rationalizes the myriad transit modes utilizing the station, organizing these around a new bus rapid transit plaza and commuter drop-off area;
2. Improves vehicular, pedestrian and bicycle access to and around the station;
3. Increases commuter parking by 10% above the station's existing parking capacity.

The plan also proposes a bold new vision for future land use in the area, featuring three new districts:

- A mixed-use "Transit Village" Core;
- A new residential neighborhood for 600 residential units, anchored by a new park, and
- A Class A commercial office district on a Township-owned brownfields site.

View of the proposed main street looking toward Princeton Junction Station

The proposed transit village is oriented around a series of new public places, including the Town Green, a new green pedestrian mall that links the new residential district to the station, and a design for a Vaughn Drive that balances its dual role as a connector and as an addressing street. The heart of the new development will be a new main street that will provide a new gateway to, and place of gathering for the Township of West Windsor.

I. EXECUTIVE SUMMARY

View of the proposed Vaughn Drive Extension looking south

The benefits of this vision for the Township of West Windsor and the greater region are manifold:

1. New arrival to- and identity for West Windsor;
2. New public spaces and amenities;
    - Main Street
    - New Town Square
    - Vaughn Drive
    - Long Meadow Park
3. Improved pedestrian access to the station from the east and west sides of the tracks;
4. Complete bicycle connection through the station area;
5. Improved vehicular access to and around the station;
6. New ratables;
7. Expand housing opportunities for empty nesters and young professionals;

II. Existing Conditions

II. EXISTING CONDITIONS

Regional Context

Princeton Junction Station's location between Alexander Road and Washington Road/County Route 571 puts it within the larger traffic dynamic of Route 1, a major regional employment corridor.

The Station is the second busiest station in NJ Transit's commuter rail system and is the major point of arrival to West Windsor Township, the Route 1 Corridor, Princeton University and Princeton Township for train passengers.

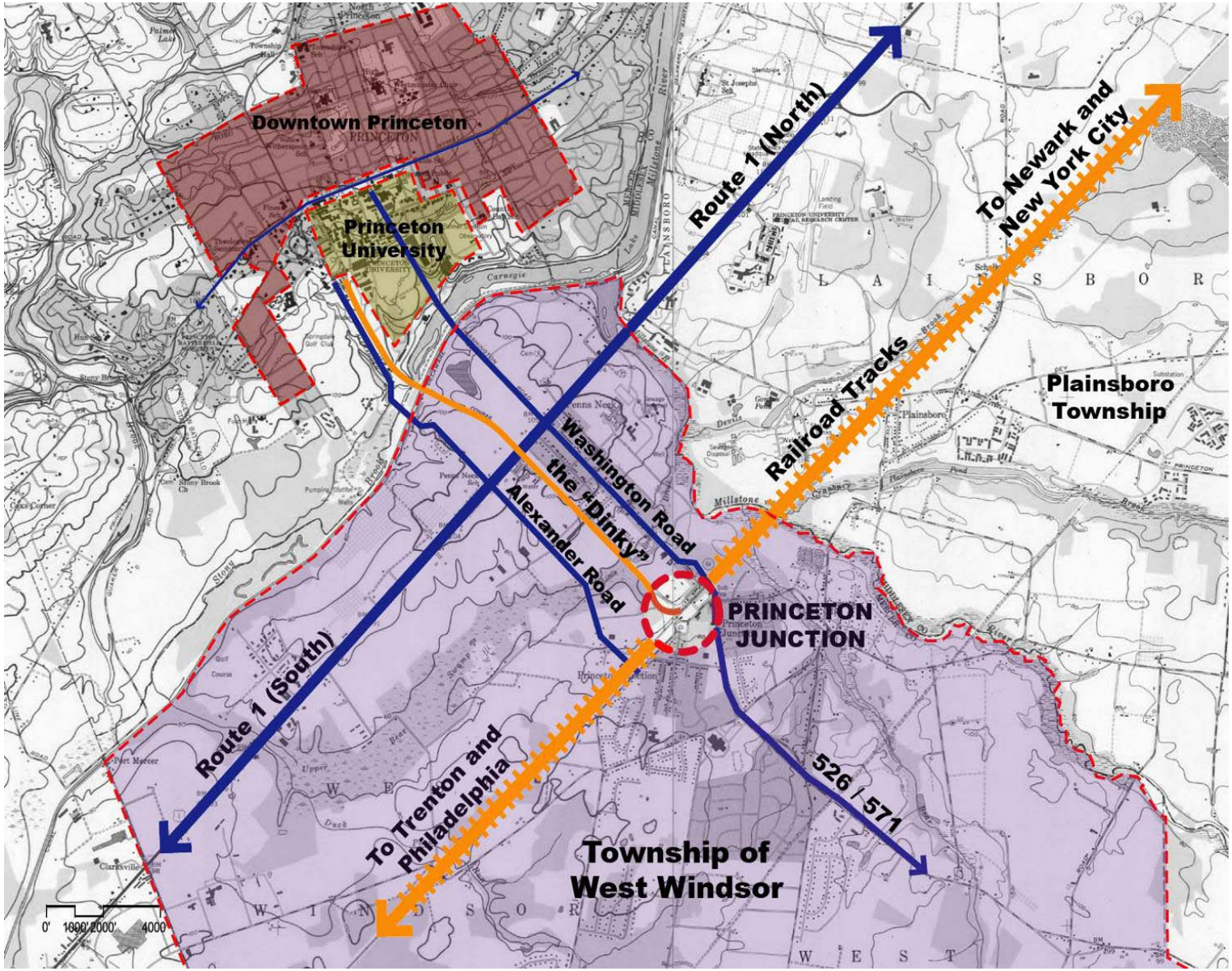
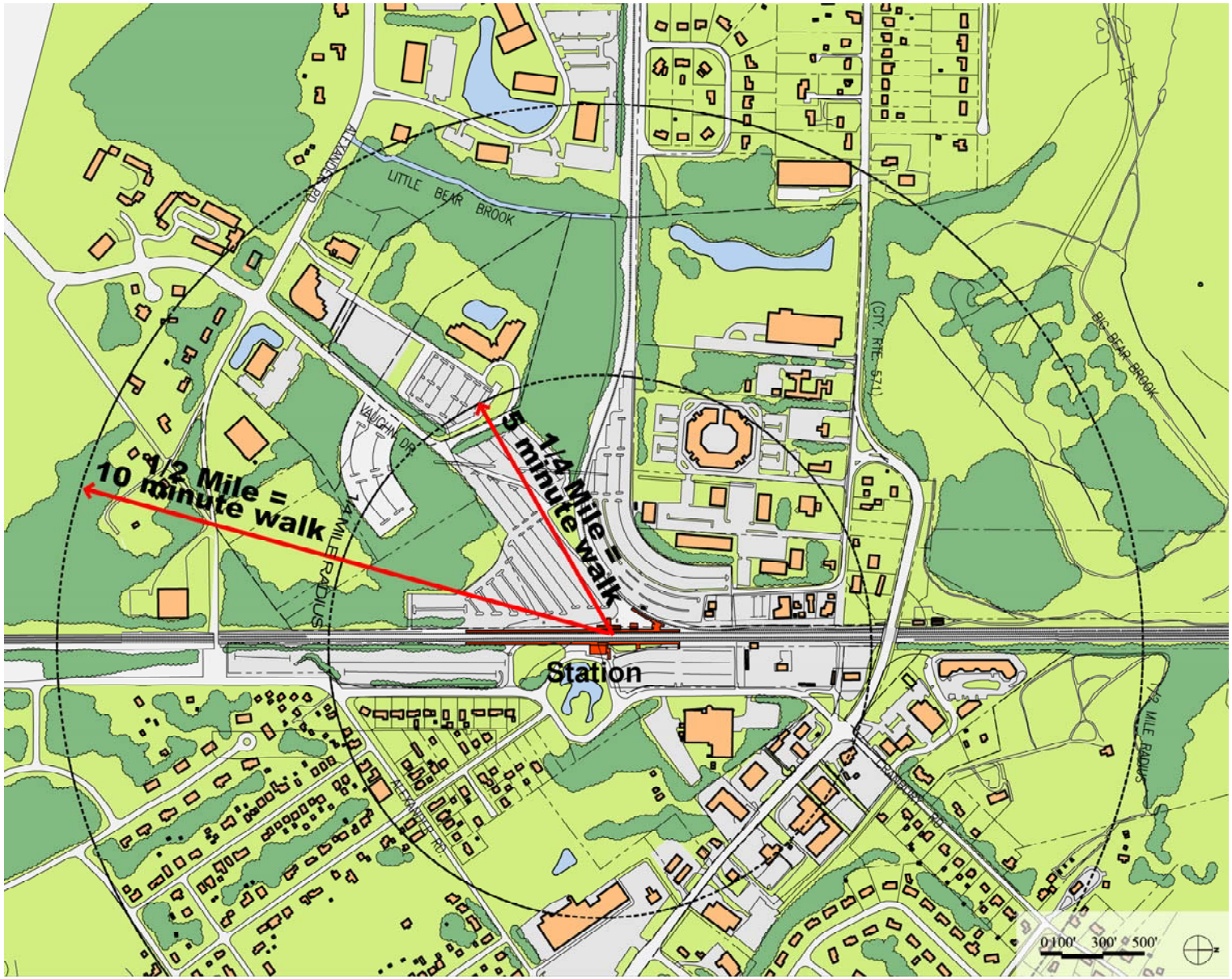


Diagram showing the regional context of the study area

II. EXISTING CONDITIONS

The Study Area

The study area comprises the land within a half-mile radius of the Princeton Junction Station. Properties within this radius are generally considered to be within a ten-minute walk (1/2 mile radius) to the station.

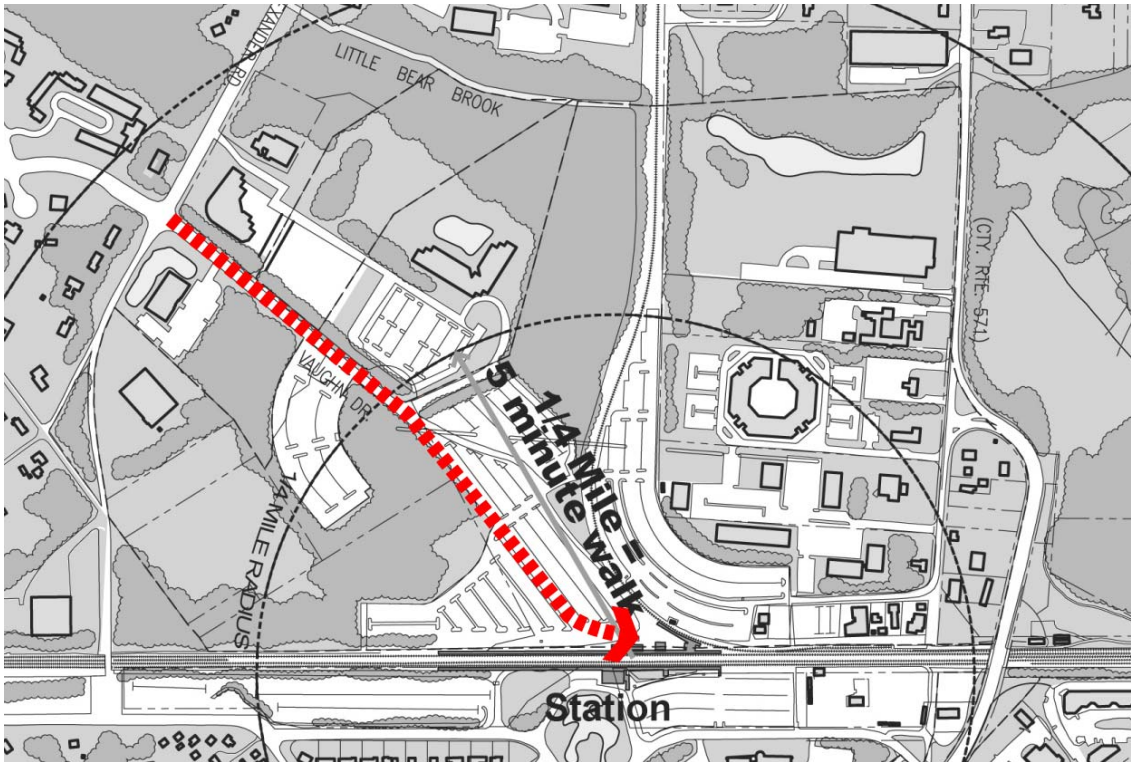


Existing Conditions

II. EXISTING CONDITIONS

The Site: Arrival Experience by Car

At present, the arrival sequence into the station area by automobile is confusing and does not form an impression. The primary entrances into the station area from the south and the north is via Vaughn Drive and Station Drive, respectively. Both end in surface parking lots, leaving drivers to navigate through the parking lot to the drop-off area.



Photos of the Princeton Junction parking lot

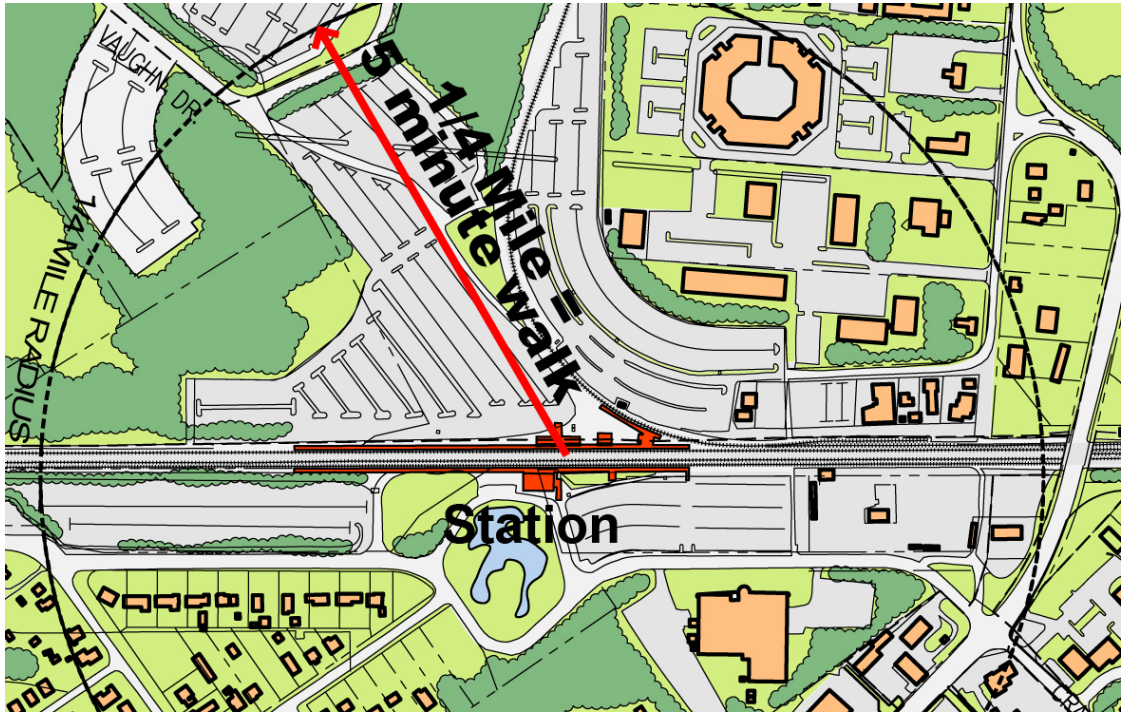
Vaughn Drive, looking toward the station

Station Drive

II. EXISTING CONDITIONS

The Site: First Impressions

- On the west side, the large expanse of the commuter parking lot dominates the view and is the first impression of West Windsor for visitors arriving by train
- The streetscape amenities are disorganized and do not impart an impression of quality
- The waiting room is removed from the bus, Kiss ‘n Ride and taxi drop-off area



Existing west side station entry

Parking lots

Disorganized amenities

II. EXISTING CONDITIONS

The Site: Focus Area

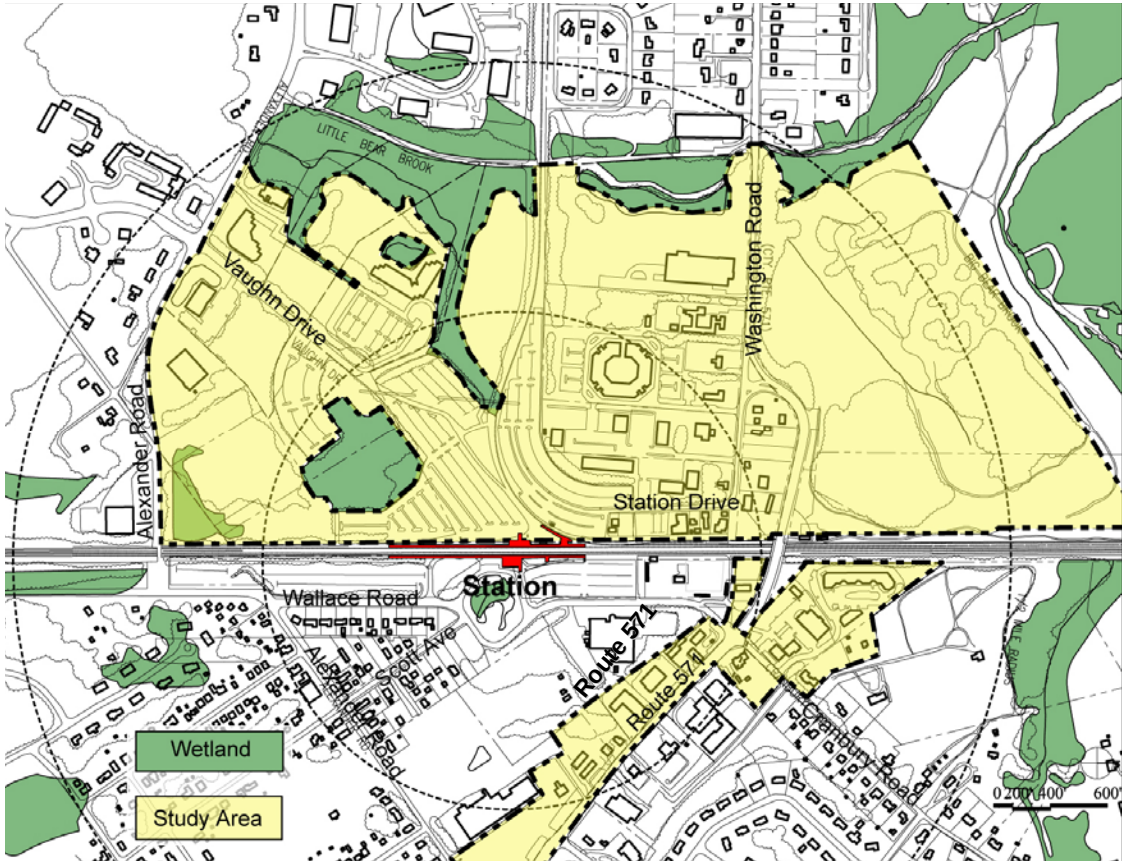
Due to its larger parcel sizes and more concentrated pattern of ownership, the west side of the Northeast Corridor (NEC) Rail Line became the primary focus within the study area. On the east side, respect for existing neighborhoods and ongoing studies confined the focus area to the Route 571 corridor leading to the Washington Road bridge.

On the west side, the focus area encompasses 147 acres. Within this area, are approximately 20 acres of wetlands. The wetlands fragment the developable area, separating the properties along Alexander Road from the station area.

The existing organization and land use of this portion of the study area does not take advantage of its proximity to the station:

- The large scale of its street and block pattern are not conducive to walking
- Each property has its own access point
- Site access is not clear and inefficient

On the east side, the Route 571 Corridor is poorly defined with little, if any, provision for pedestrian access, and no discernable route to the station. A more in-depth study of Route 571 sponsored by the Township and Mercer County is in progress.



Focus Area

II. EXISTING CONDITIONS

The Site: Parking

Commuter parking for the station is distributed over eleven surface lots. These lots are both publicly- and privately-owned and operated.

- NJ TRANSIT commuter lots: (Lots: 1,2,3,5 and 7)

  2,560 spaces +/-

- West Windsor commuter lots: (Lots: 4 and 8)

  950 spaces +/-

- Private / Other parking lots: (Lots: 6,9,10 and 11)

  163 spaces +/-

- Total Number of commuter parking spaces:

  3,635 spaces +/-

- Total Area of surface parking:

  27.5 acres +/-

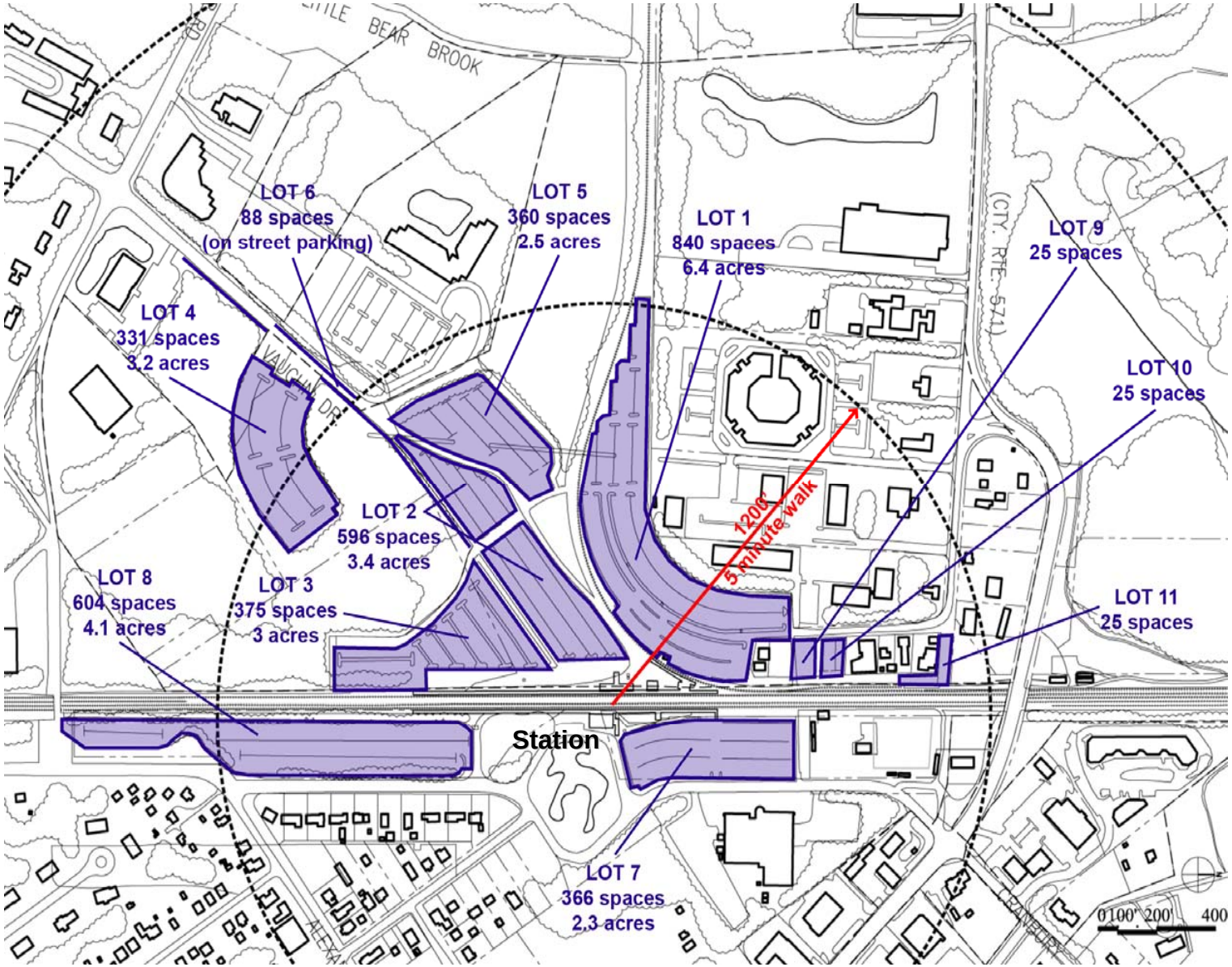


Diagram showing existing parking lots

II. EXISTING CONDITIONS

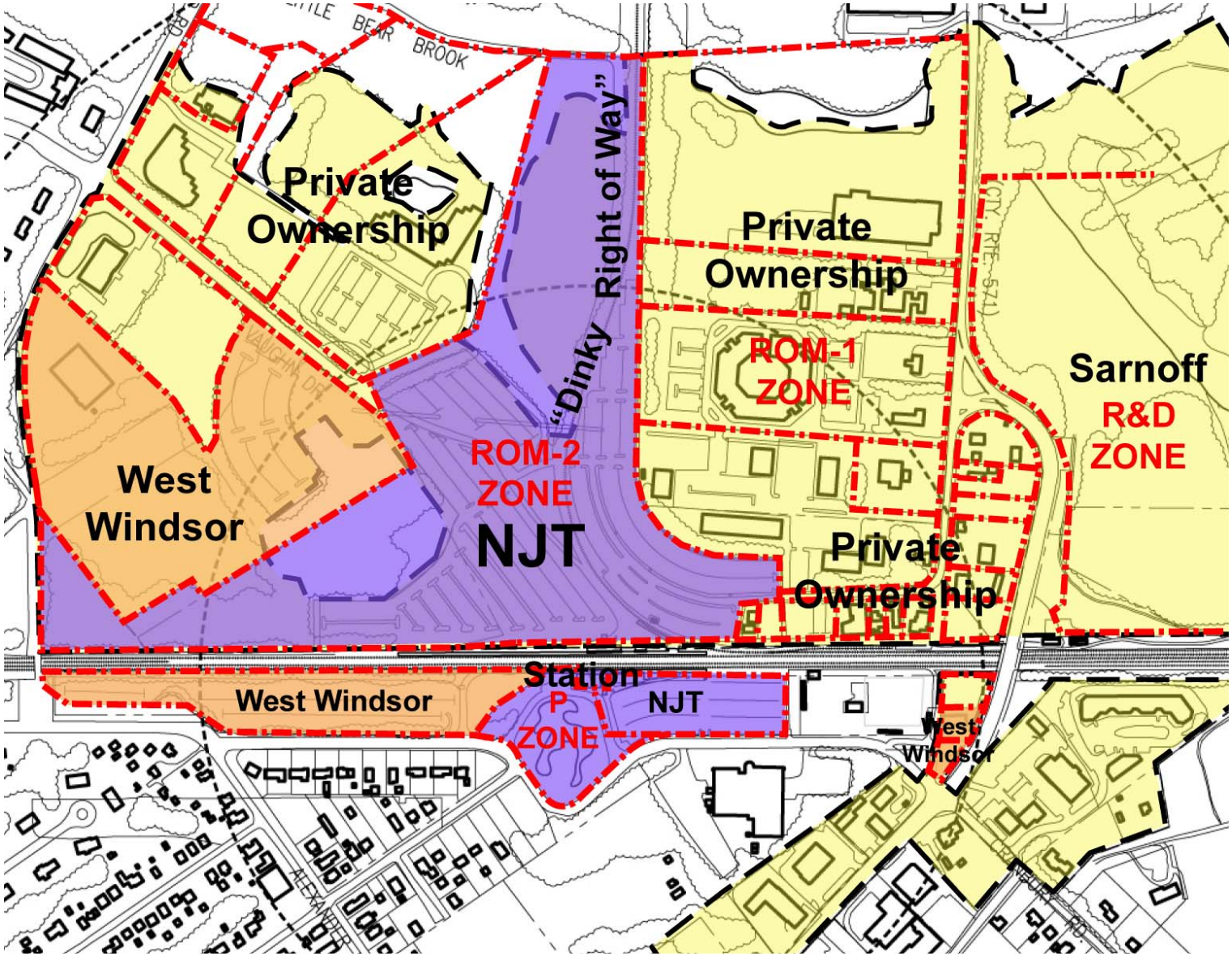
The Site

Property Ownership

- A significant portion of the land on the west side of the Northeast Corridor will be affected by the Vaughn Drive extension
- Much of the property west of the proposed extension along Washington Road is underutilized with respect to its proximity to a major transit facility

Existing Zoning

The existing zoning districts for the study area are ROM-1, ROM-2, and R&D which allow for research and office uses, but do not encourage the type of uses, and/or mix of uses that would be complementary with a transit node.



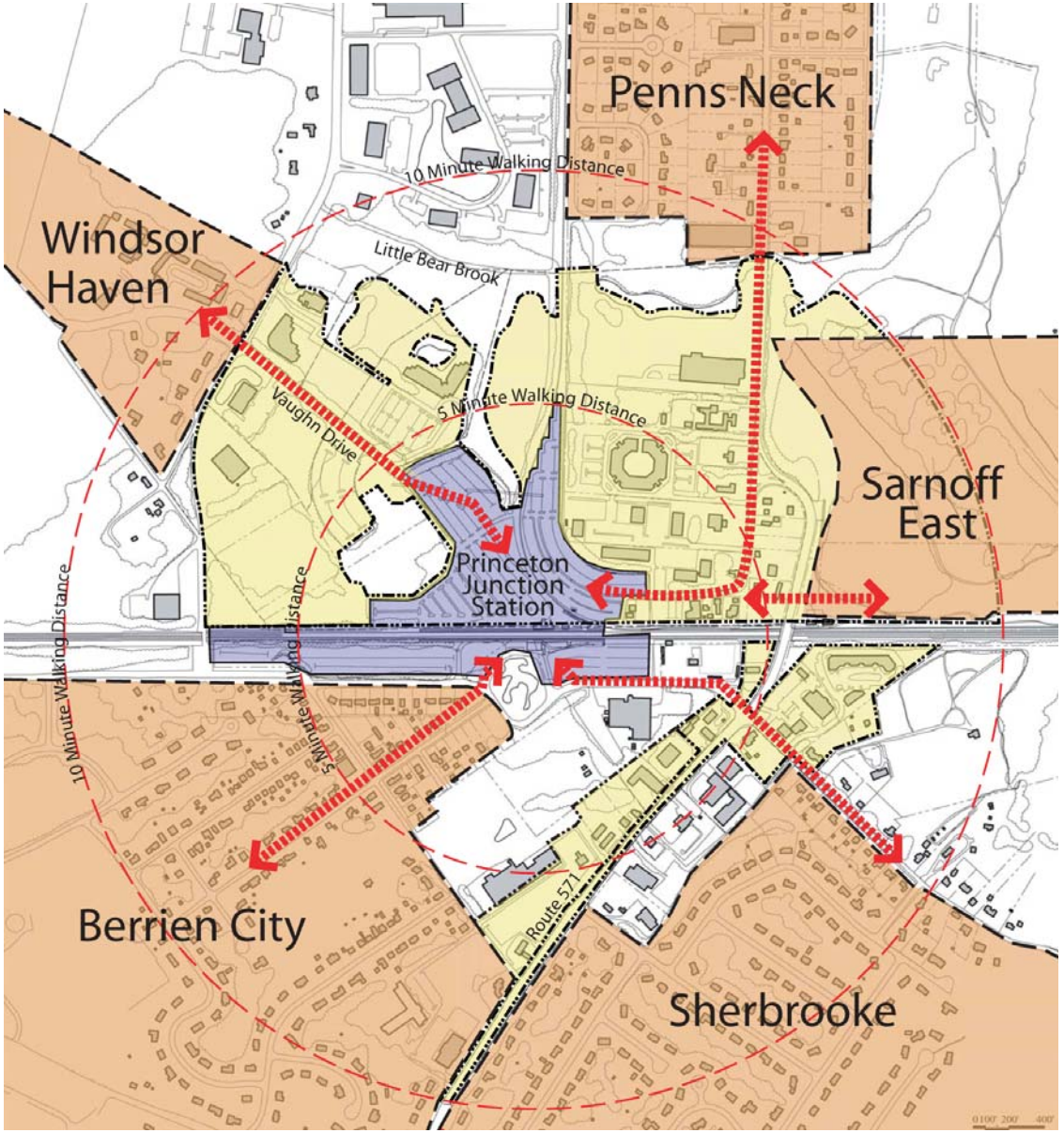
Existing property ownership map

II. EXISTING CONDITIONS

Access: Existing Pedestrian Linkages

Pedestrian circulation to the station is limited and fragmented.

- Windsor Haven, Penns Neck and Sarnoff are not linked to the station by any clear pedestrian pathways and, as such, do not share in the benefits of being near a key transit hub
- Connections between Sherbrooke and Berrien City to the west side of the tracks need improvement
- In the immediate vicinity of the station, there are no clear pedestrian routes, and circulation is confusing



Existing Pedestrian linkages diagram

II. EXISTING CONDITIONS

Access

Intermodal Transfer

- Limited cover from the elements
- The most common transfers are between N.E. Corridor, Dinky, NJ TRANSIT Buses, and taxis

Drop-off and Pick-up points

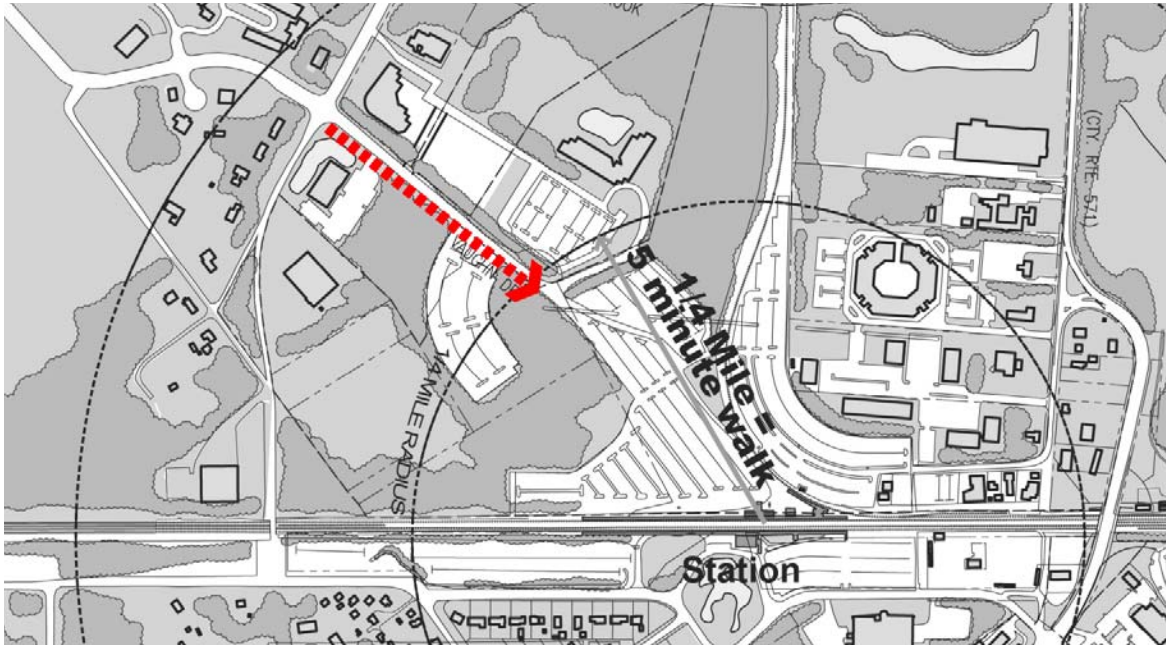
- Drop-off areas for taxis, buses and shuttle buses are shared and not efficient
- Up to nine taxis queue-up during peak hours
- Limited cover from the elements

II. EXISTING CONDITIONS

Access: Pedestrian Linkages along Vaughn Drive

Vaughn Drive has sidewalks on its east side only.

With the few buildings that are on Vaughn Drive set well back from the street, and a lack of engagement on its edges, Vaughn Drive does not currently present a secure or welcome environment for pedestrians.



Vaughn Drive looking south toward Alexander Road

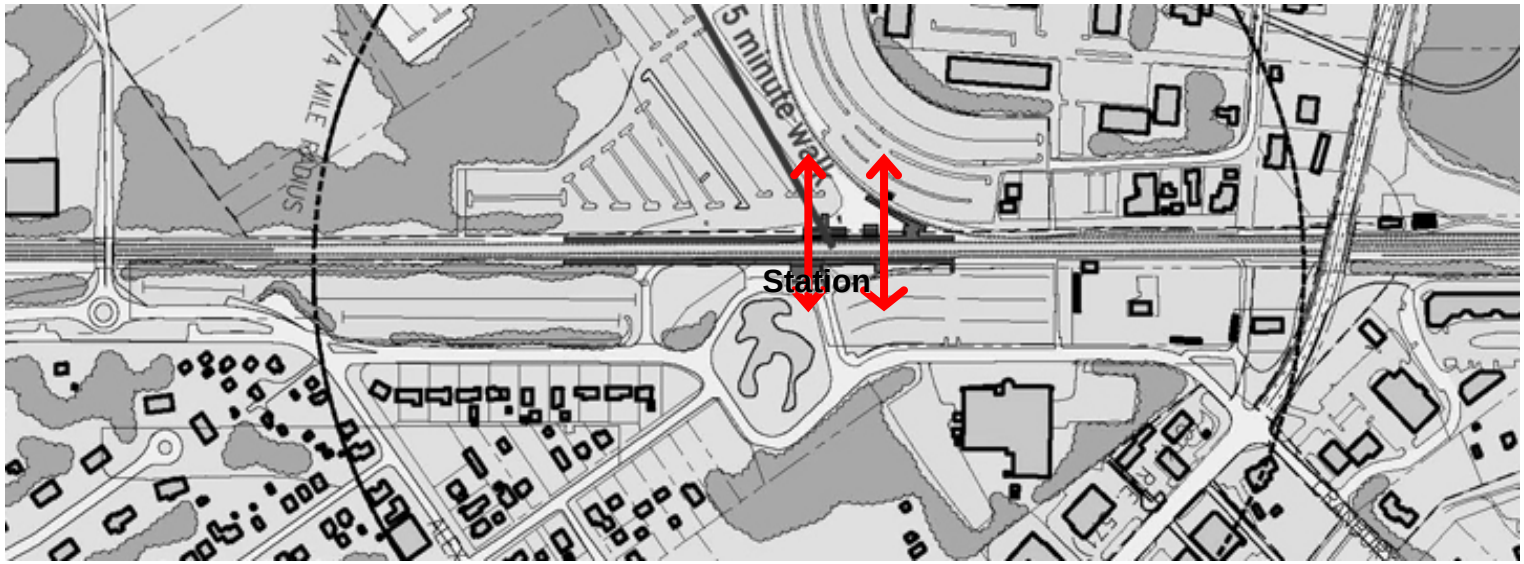
Two views of Vaughn Drive looking north toward the Station

II. EXISTING CONDITIONS

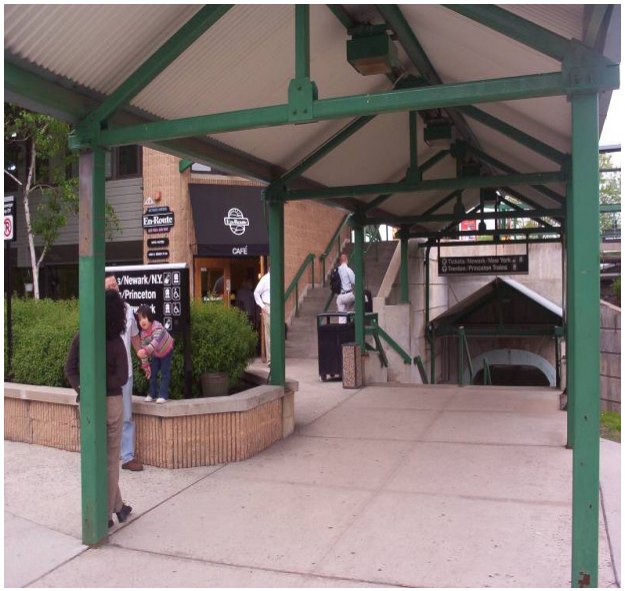
Access: East-West Pedestrian Connections

There are four crossings of the Northeast Corridor Tracks.

Two are pedestrian tunnels connecting the northbound and southbound platforms at the station.



View of the primary pedestrian tunnel ramp



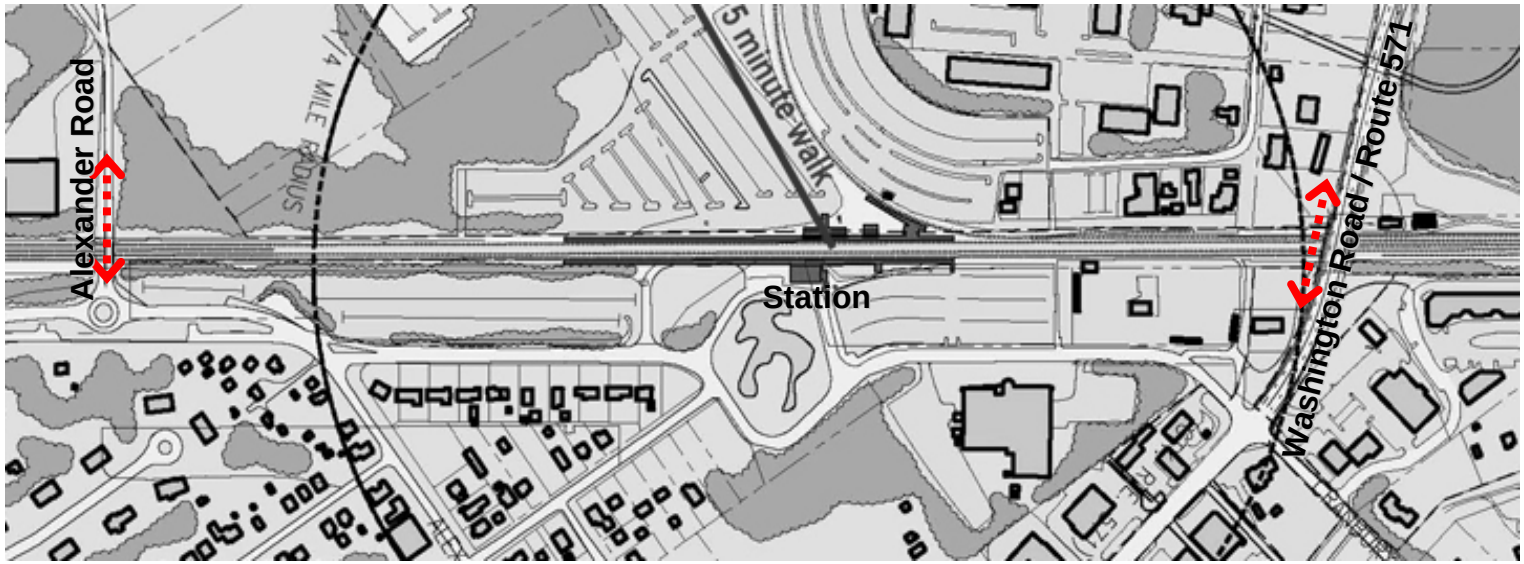
View looking west of the primary tunnel

View of the secondary pedestrian tunnel

II. EXISTING CONDITIONS

Access: East-West Pedestrian Connections

The other two crossings, at the Alexander Road Bridge and Washington Road/Route 571 Bridge, do not presently provide a significant pedestrian crossing with direct access to the Princeton Junction train station.



View looking west of the Route 571 Bridge

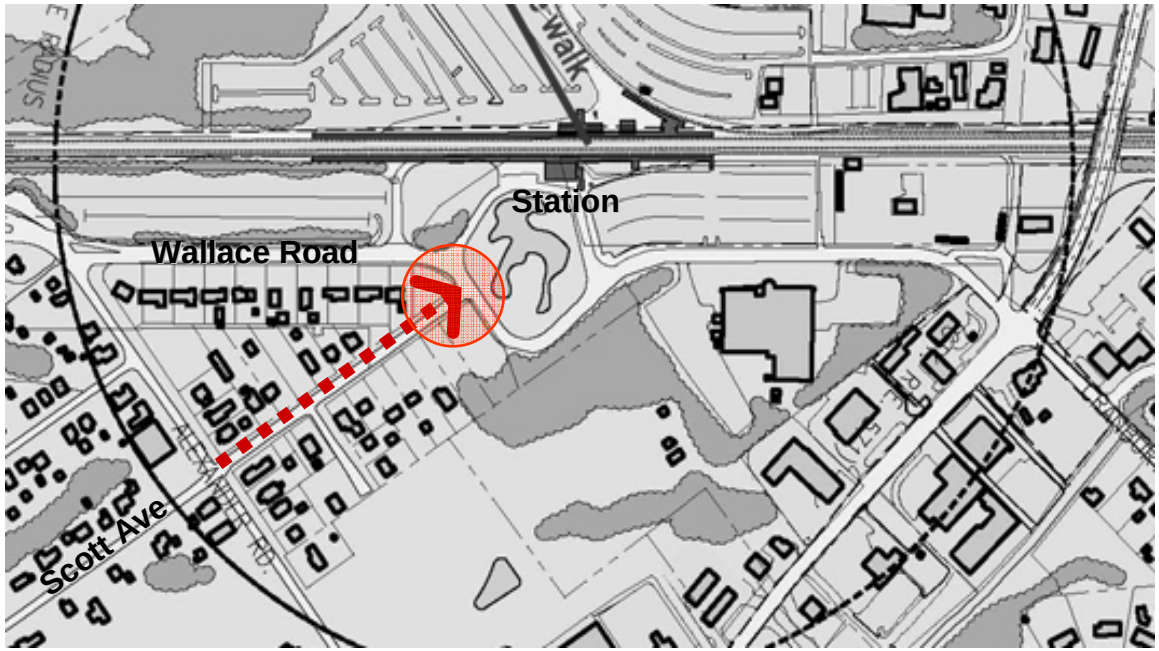
View from the railroad tracks of the Route 571 Bridge

II. EXISTING CONDITIONS

Access: East side pedestrian linkages

In general, access to the station on the east side of the Northeast Corridor exists in a limited form:

- While streets (with the exception of Wallace Road) leading from the Berrien City neighborhood have sidewalks, at selected locations crossings can be improved, including a blind corner condition at the intersection of Scott Avenue and Wallace Road
- Route 571 is in need of improvement
- The new Alexander Road bridge (to be designed and implemented by NJDOT) will accommodate improved pedestrian access over the Northeast Corridor



View looking east along Scott Avenue

View looking west along Scott Avenue

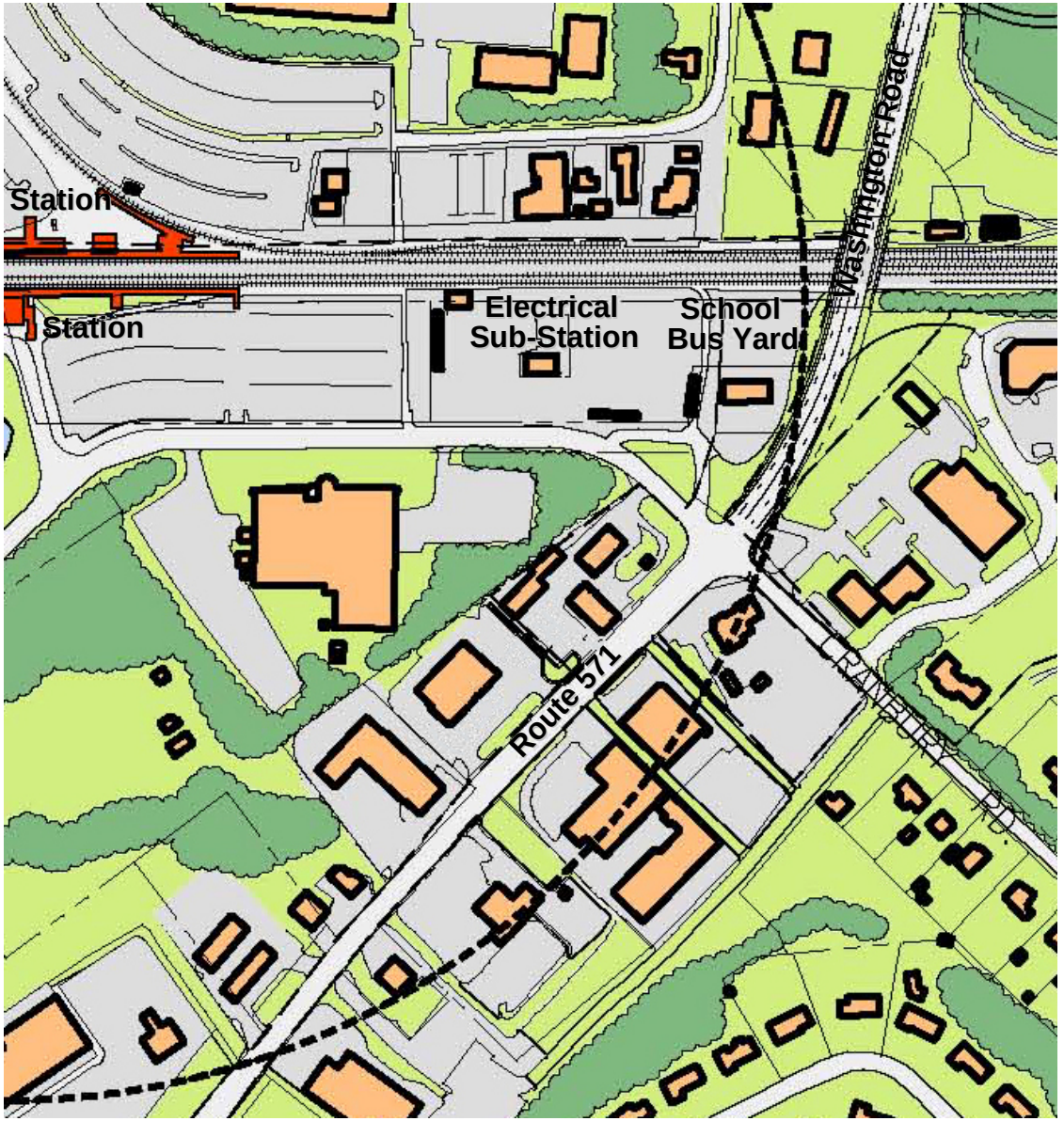
View looking towards Berrien City neighborhood

II. EXISTING CONDITIONS

Access: Route 571/Washington Road

Route 571/Washington Road is the main route connecting West Windsor/Plainsboro South High School, the Windsor Plaza shopping center and the station. But with no curbs and limited sidewalks, buildings set far back from the street, and little in the way of shade, Route 571 does not provide a comfortable environment for pedestrians.

Route 571 looking west toward the Cranbury Road intersection



Map of Route 571 Corridor east of the station

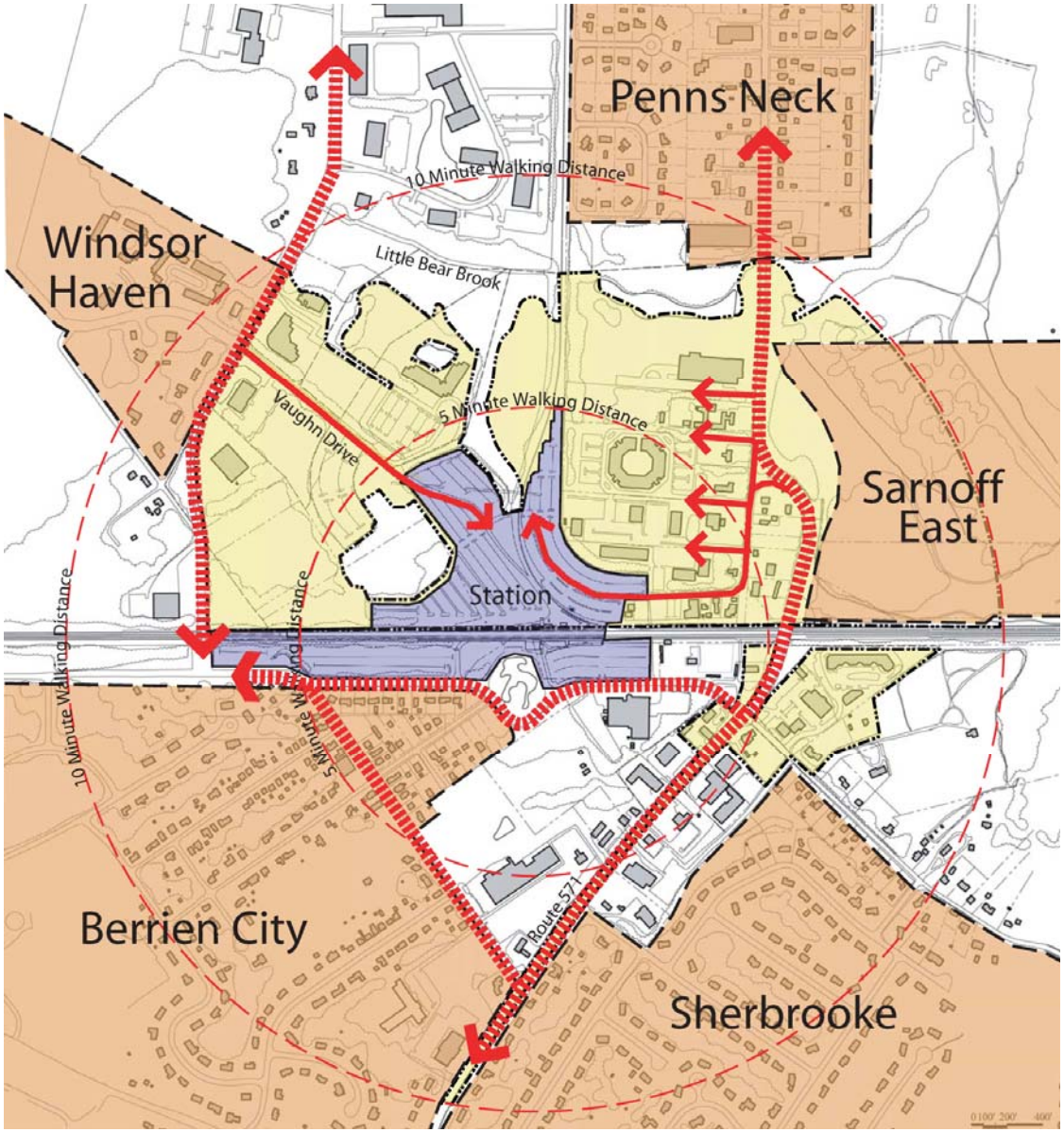
II. EXISTING CONDITIONS

Access: Existing Vehicular Access

Existing vehicular circulation routes to, around, and through the station area are not continuous and at their capacity. Cars proceeding north on Vaughn Drive - the sole north-south connection - for example, must go through an NJ Transit parking lot, across the tracks, and onto another driveway that winds its way through another NJ Transit parking lot, before continuing on to Station Drive.

Traffic is forced onto a limited number of streets, to cross back and forth over the Northeast Corridor to Route 1 causing constant congestion. On Washington Road each of the properties has its own access point, exacerbating congestion along this important route.

A major east-west movement from Route 571 to Route 1 via Alexander Road creates a level of cut-through traffic through the Berrien City neighborhood that needs to be addressed.

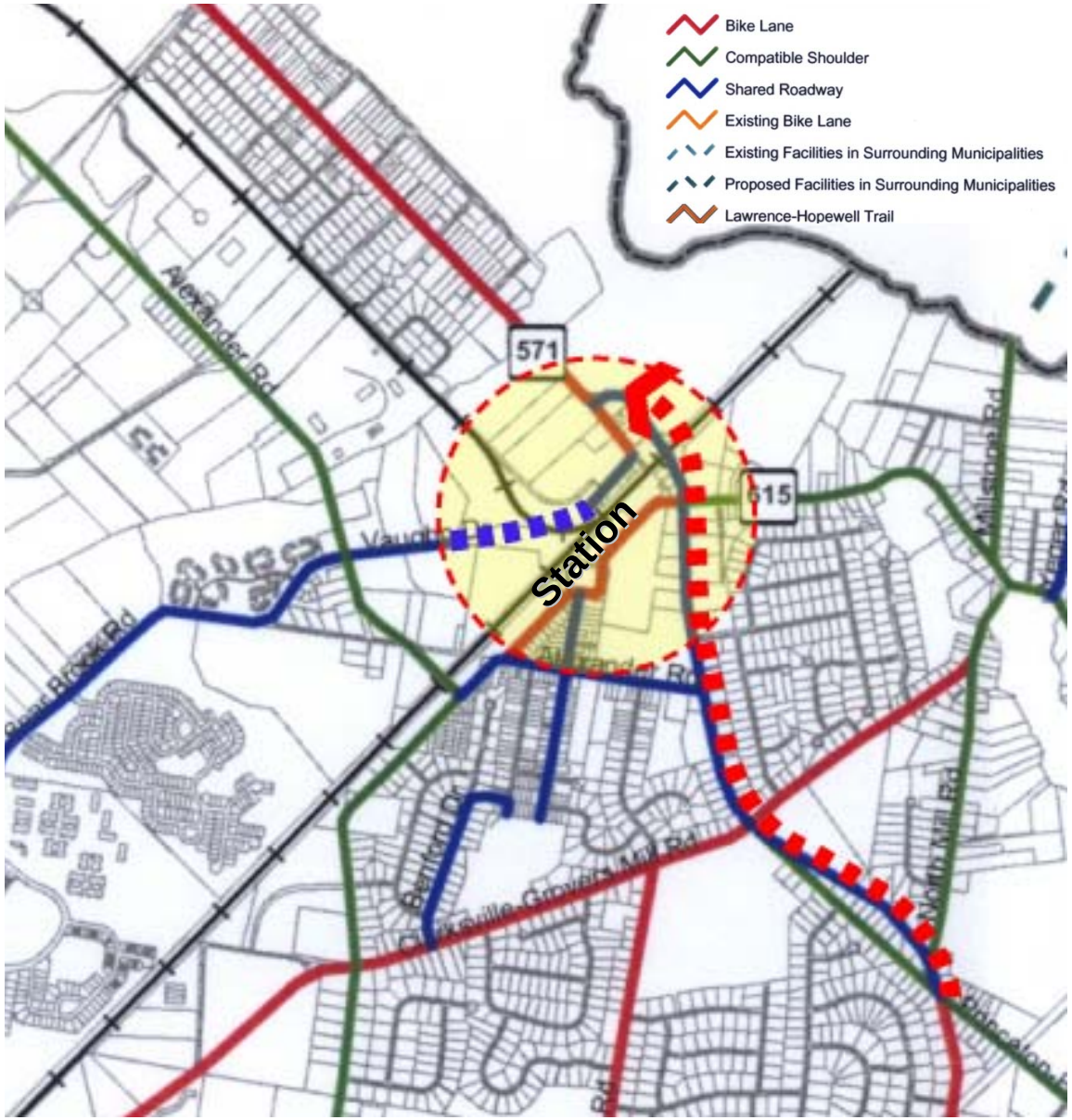


Existing vehicular access diagram

II. EXISTING CONDITIONS

Access: Bicycle Master Plan

- The Township's bicycle system does not continue through the station area
- The sole north-south route, Vaughn Drive, which is designated a "shared roadway" does not connect through the station area
- At present, there is no east-west connection, although the Alexander Road Bridge will achieve this linkage by incorporating room for bicycle access
- At Route 571, a shared roadway interrupts the dedicated bike lane along Washington Rd and Route 571
- Increased bicycle use can help alleviate the demand for parking

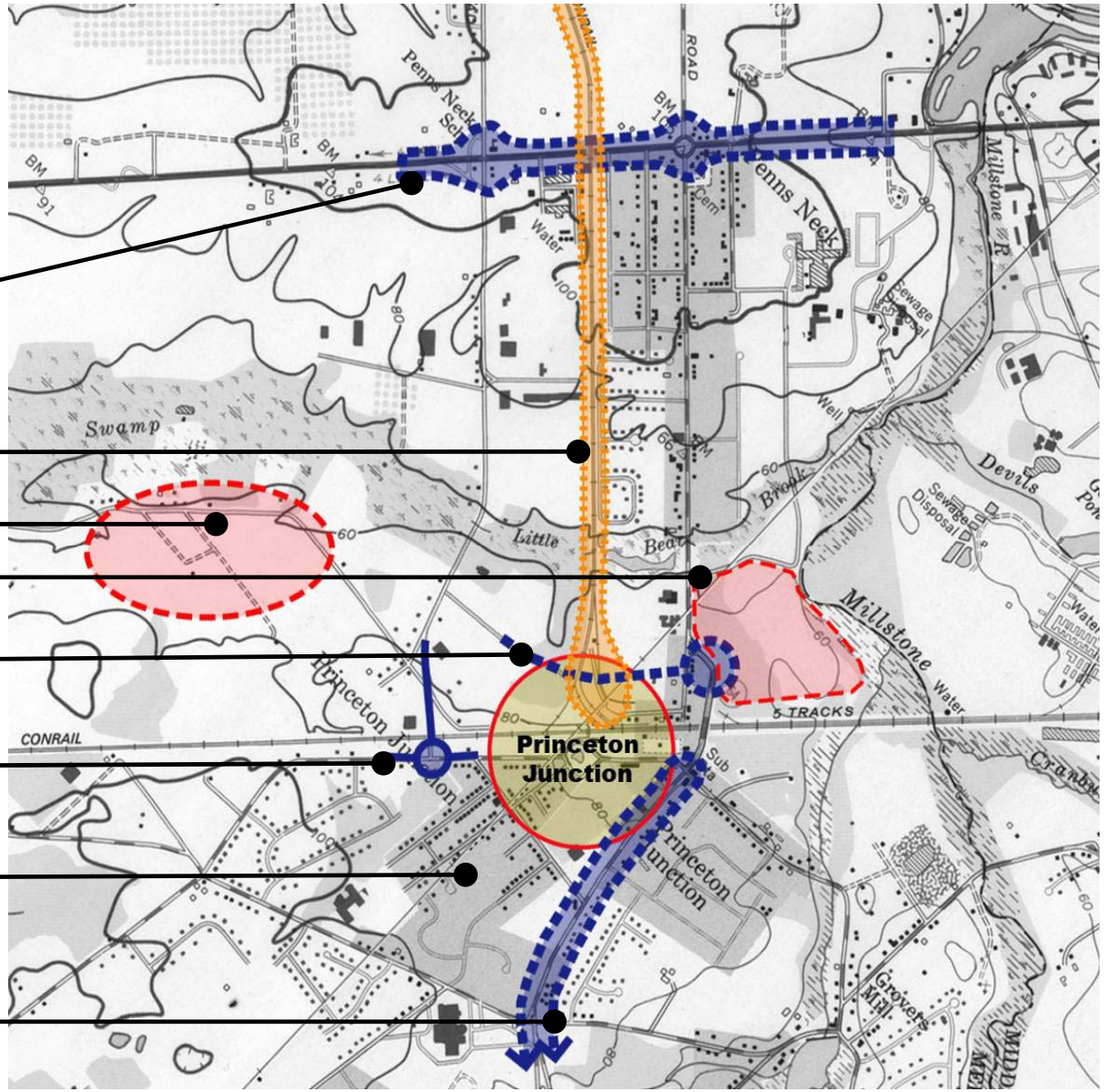


III. Current Plans and Proposals

III. CURRENT PLANS AND PROPOSALS

Current Projects and Proposals – *State and Private Sector*

The State, Mercer County and West Windsor and private sector developers have launched or will soon embark upon various initiatives at and surrounding Princeton Junction Station. Together they have the potential to usher in significant change to the area as noted below.



III. CURRENT PLANS AND PROPOSALS

Bus Rapid Transit

NJ Transit is currently conducting a study of the feasibility of a bus rapid transit (BRT) system along the Route 1 corridor.

In advance of a more developed study by the BRT consultant team, the Vision Plan team considered the land use and design implications of a variety of likely scenarios for the future of the Dinky and the implementation of a new BRT system.

Because any decision to decommission the Dinky would entail an uncertain time frame, the team assumed that whether the Dinky was retained or not, all scenarios in the station area should plan around the present curved alignment of the Dinky. The team also built in flexibility on what route the BRT would take (e.g. Alexander Road, the Dinky right-of-way, Vaughn Drive Connector, etc.).

The interface between the BRT and the Northeast Corridor will be a significant new element in the station area.

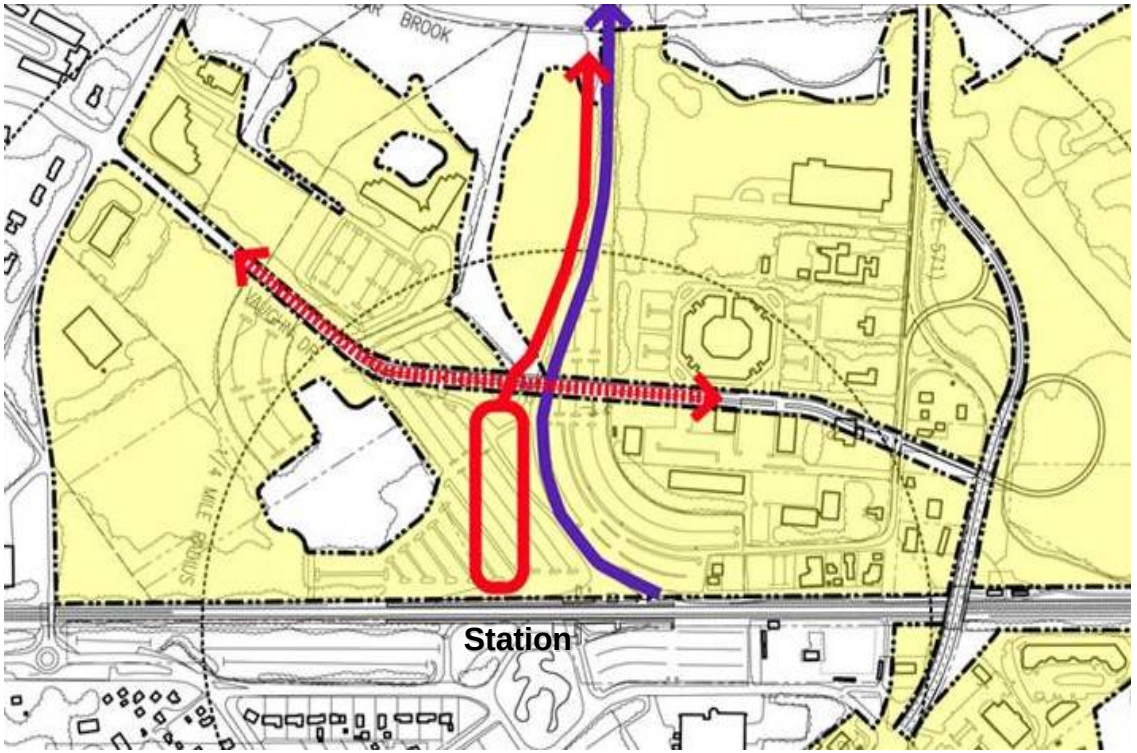


Diagram showing conceptually, the assumptions used for the Vision Planning process: Upgraded Dinky, New BRT Service on Alexander/Washington, Dinky right-of-way, Vaughn Drive Connector, etc.

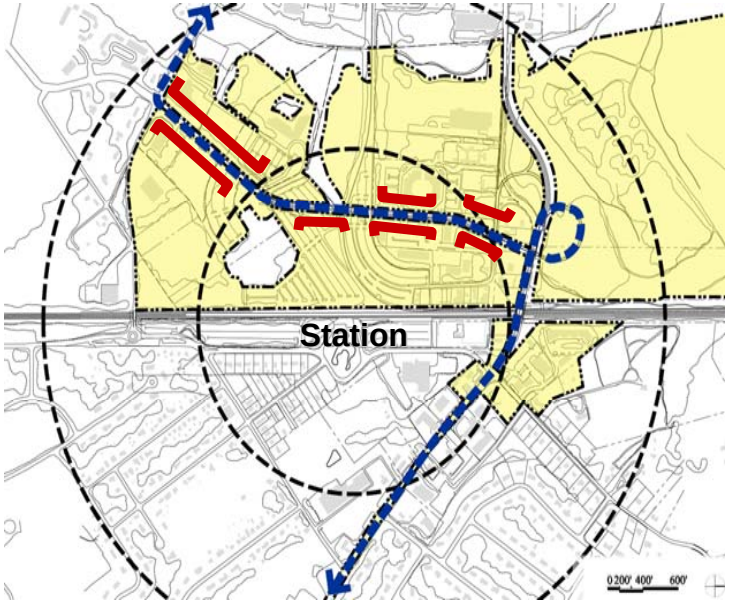
- Need to plan for a major new drop-off facility and intermodal transfers

III. CURRENT PLANS AND PROPOSALS

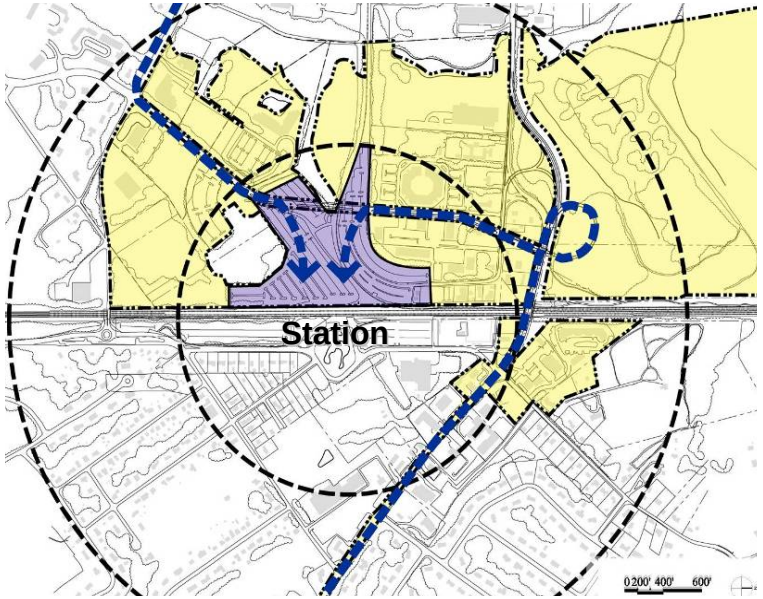
Creation of the Vaughn Drive Connector

The proposed creation of the Vaughn Drive Connector by NJDOT, part of the preferred plan that came out of the Penns Neck EIS process, will have a dramatic impact on the Station area.

The new Connector will link Alexander Road to Washington Road, allowing cars to make an east-west connection through the station area to Route 1 along Alexander Road and minimize cut-through traffic in residential neighborhoods



As a major new public thoroughfare, it will affect land use in the area by creating new frontages on its north and south sides.



It will also provide a clearer, more direct way into commuter parking areas.

III. CURRENT PLANS AND PROPOSALS

Vaughn Drive Connector

The Vaughn Drive Connector was proposed as part of the Penns Neck Environmental Impact Study to alleviate traffic through the Penns Neck and Berrien City residential neighborhoods.

But while the EIS specified a preferred alignment, it considered the Connector's functions as a bypass in isolation. Other integral elements such as design and physical characteristics were not considered.

The other major aspect not addressed was adjacent development. As such, the proposed Vaughn Drive Connector does not provide for essential elements like traffic signals or cross streets, which would be presumably necessary to access the station and associated parking garages.

This is most conspicuous at the northern terminus of the Vaughn Drive Connector, where access to the proposed Sarnoff East development, the largest development proposal within the station area, is not addressed.

Finally, the timing of the Penns Neck EIS did not permit it to consider the BRT.

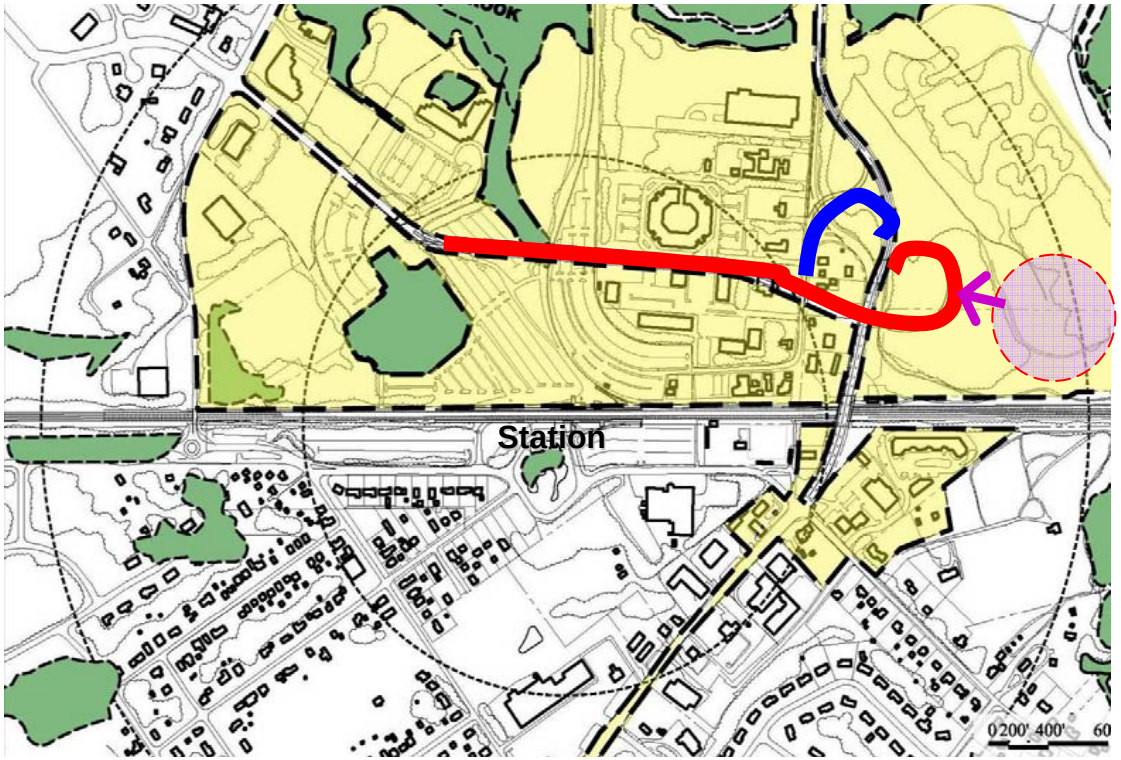


Diagram showing northern terminus of the Vaughn Drive Connector and its relationship to Sarnoff East

III. CURRENT PLANS AND PROPOSALS

Vaughn Drive Connector

The new Vaughn Drive will provide a rare and important opportunity to set the tone for how the Station Area could develop.

New development will likely require:

- Increased capacity on Vaughn Drive
- New traffic signals at key intersections
- Additional lanes in either direction
- Parallel parking
- Pedestrian crosswalks
- Enhanced sidewalks and bicycle lanes

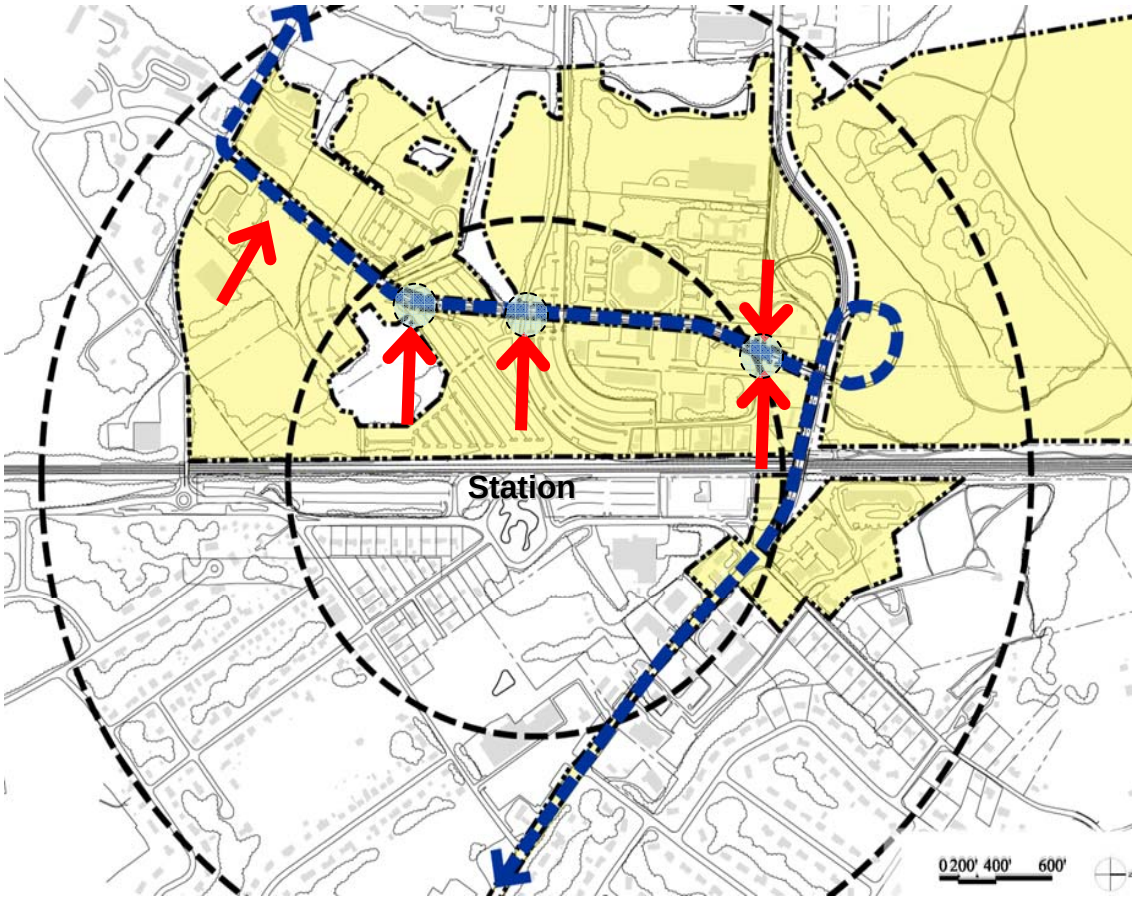


Diagram showing potential access points and intersections for the Vaughn Drive Connector

IV. The Vision

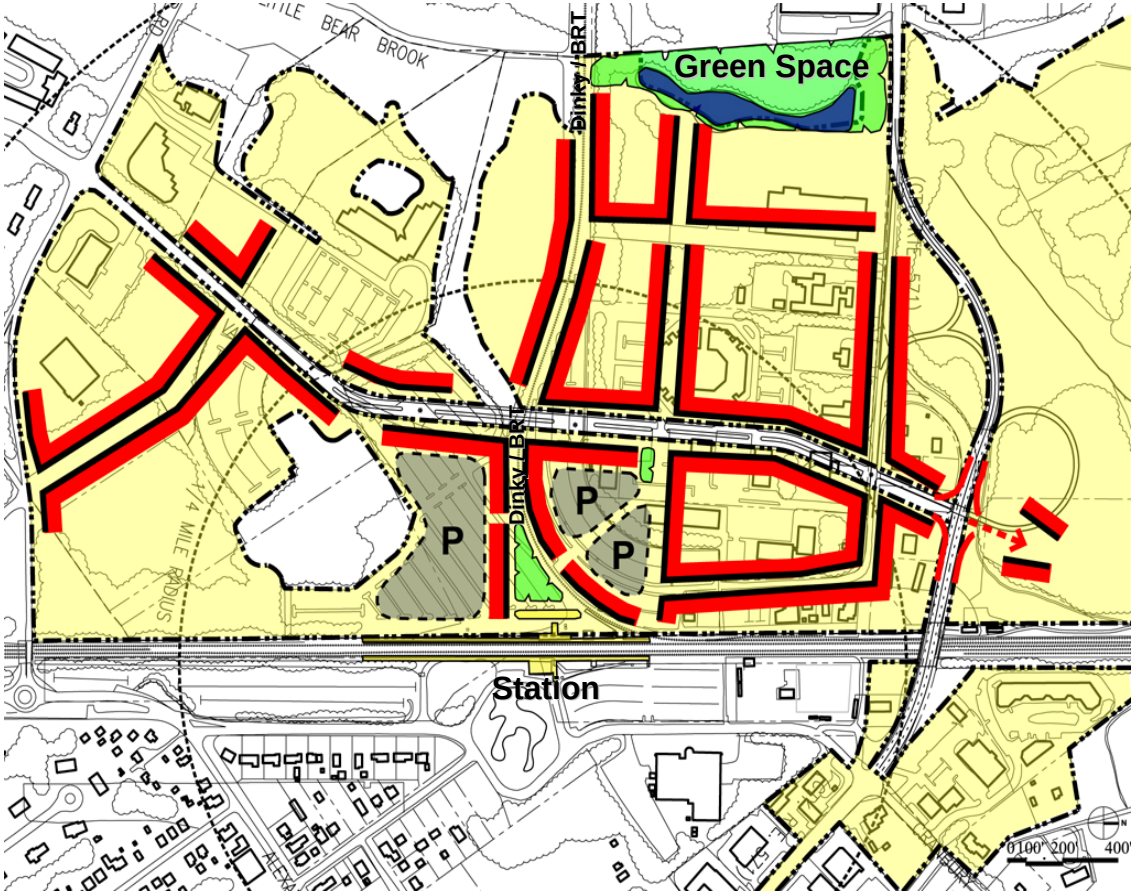
IV. THE VISION

Principles

The vision for the Princeton Junction Station Area is of a vibrant, mixed-use, pedestrian-oriented village centered around the station. It is conceived of as an integral part of the existing Township, rather than a “project” or exclusive enclave.

The key principles of the plan are:

- New intermodal transit plaza and new “Main Street” for existing and new residents
- Creation of new open space
- Accommodation of the present curved Dinky alignment for future flexibility
- New pedestrian linkages to northwest portion of the site
- Vaughn Drive Connector as an addressing street
- Three Districts:
  - Mixed use Village Core
  - Washington Road Neighborhood/residential
  - Alexander Road – Office
- Density tapers away from station area
- Flexibility on height and density limits
- Incremental development
- Increased pedestrian and bicycle connections to, around, and through the station area



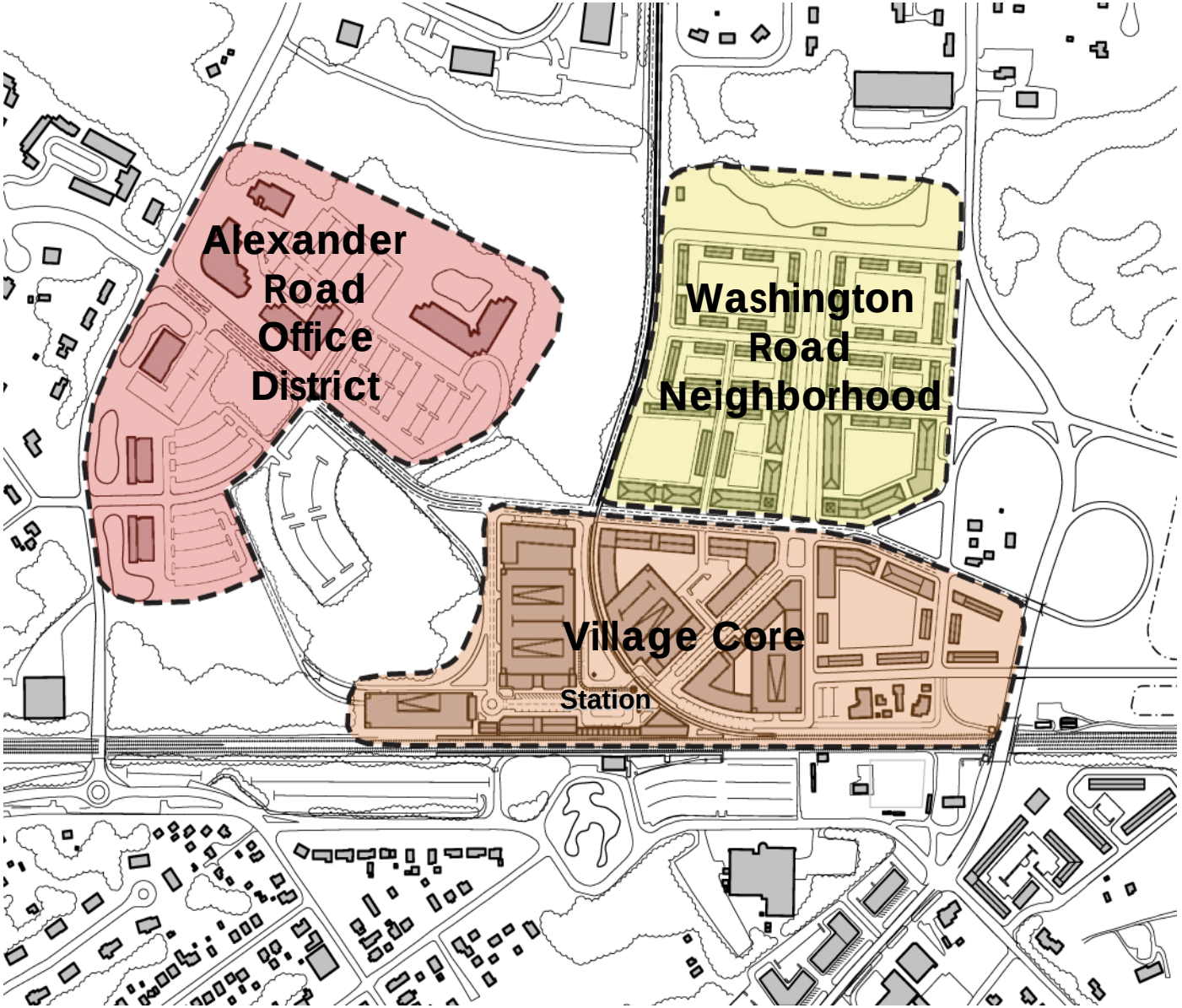
Conceptual framework diagram

IV. THE VISION

Three Districts

The study area suggests three districts based on their location, existing characteristics and adjacent uses:

- Mixed-use Village Core
- Washington Road residential neighborhood
- Alexander Road office district



Districts diagram

IV. THE VISION

Places

The framework for the new development will be a new network of streets and public spaces. The Vision Plan features four new major public spaces:

- A new Main Street
- The Pedestrian Promenade
- Route 571/Washington Road
- Long Meadow Park
- BRT Plaza/Town Green
- Vaughn Drive Connector/Addressing Street

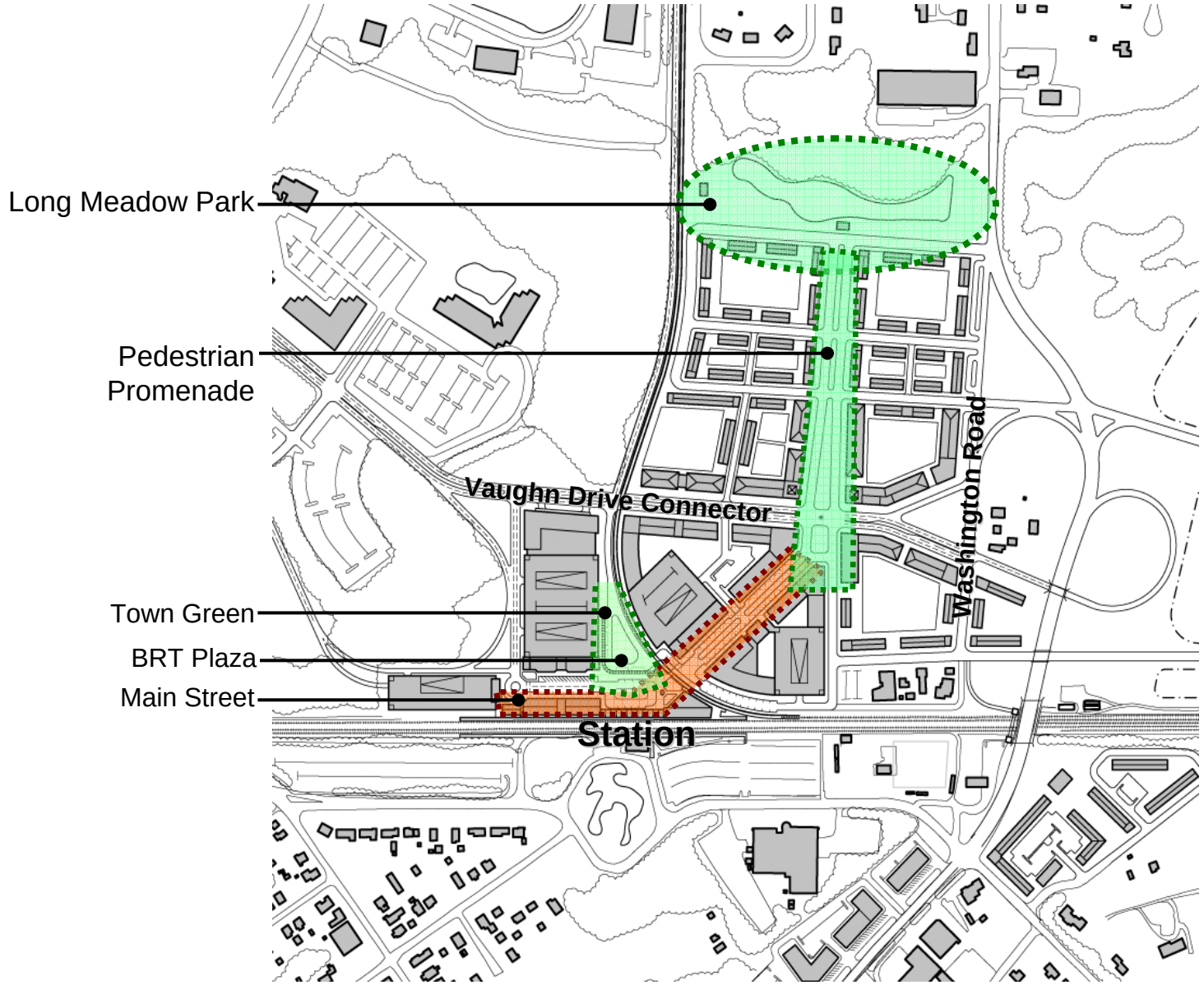


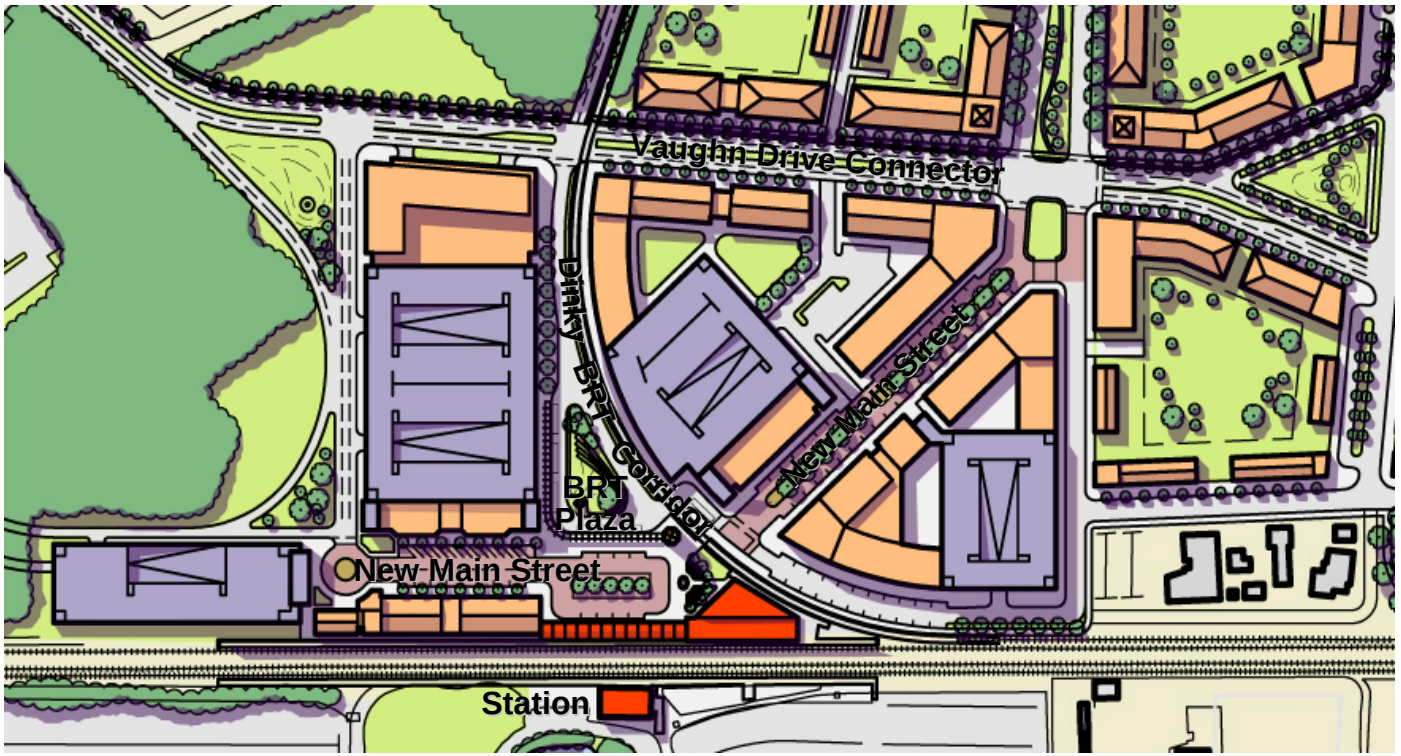
Diagram showing the key proposed places

IV. THE VISION

Districts: Village Core

The Village Core, located between the new Vaughn Drive Connector and the Northeast Corridor is envisioned as a mixed-use district with walkable, high quality public spaces and streets lined with active ground level uses. It should be a place where transit and the public environment mix, and where the environment supports transit use, communicating the perception of transit as a preferred mode of transportation.

Typical building heights will be three- to four stories, with a potential for signature buildings along Vaughn Drive or adjacent to the station to aid in wayfinding. The Village Core will be focused on a new Main Street that leads to the station. The area immediately around the station will feature a new series of public spaces accommodating intermodal transfers and a BRT plaza.



Gateway Center, Los Angeles

Mizner Park, Florida

Portland Transit Mall

IV. THE VISION

Districts: Village Core – Parking and Access

To ensure that new parking structures integrate and complement the mixed-use nature of the Village Core, the Plan envisions that new garages will be designed along the following principles:

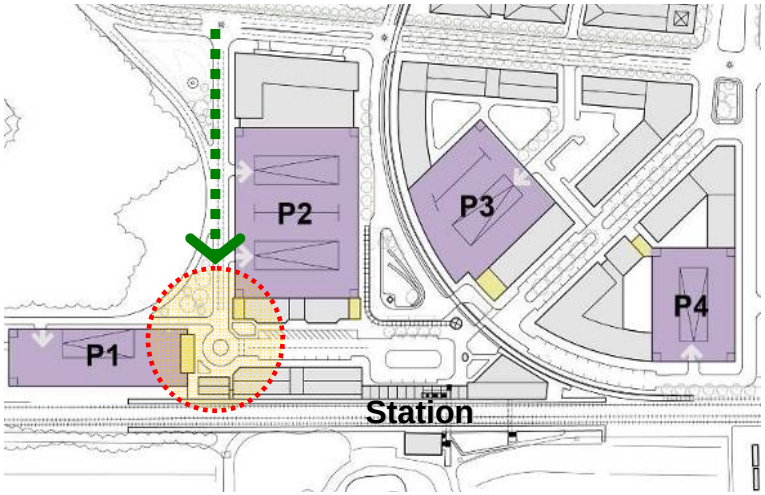
- Street-oriented buildings should be built to screen garages along important frontages
- The ground level of new garages should be designed so that they can be converted in the future into active ground level uses
- Design guidelines should be established to maintain quality architectural façade treatment
- The auto arrival to the new Main Street will be marked by a landscaped "roundabout"

Retail screening parking

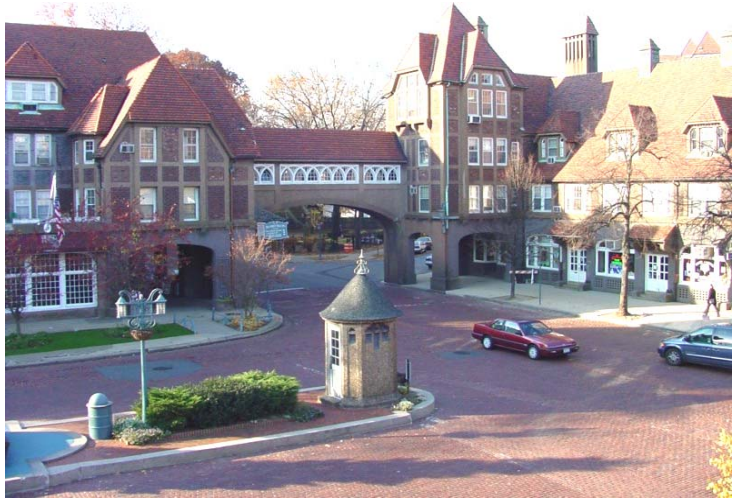
Residential screening parking structure, City Place, Fl.

Parking garage, Princeton, N.J.

Roundabout, South Orange, N.J.



Auto arrival



Forest Hills Gardens, N.Y.

IV. THE VISION

Districts: New Washington Road Residential Neighborhood

Residential development in the new Washington Road Neighborhood will be low in scale, and oriented to the street. The overall vision is to fit within the context of West Windsor's low-scale residential neighborhoods rather than create a more urban enclave.

The main housing types would be three-story multi-family residential buildings and townhouses. The multi-family buildings would be focused on the new Pedestrian Promenade, Washington Road and Vaughn Drive, while the townhouses would be oriented to the side streets. Parking would be located below, or in the interior of the block.

These types of housing are especially suited for young professionals, active seniors, and empty nesters.

Low-rise residential buildings over a parking garage, Princeton, N.J.

Low-rise residential building over a parking garage, San Jose, Cal.

Illustrative Site Plan of the Washington Road Neighborhood

Example of a low-rise multi-family residential building appropriate in scale to the proposed Washington Road Neighborhood

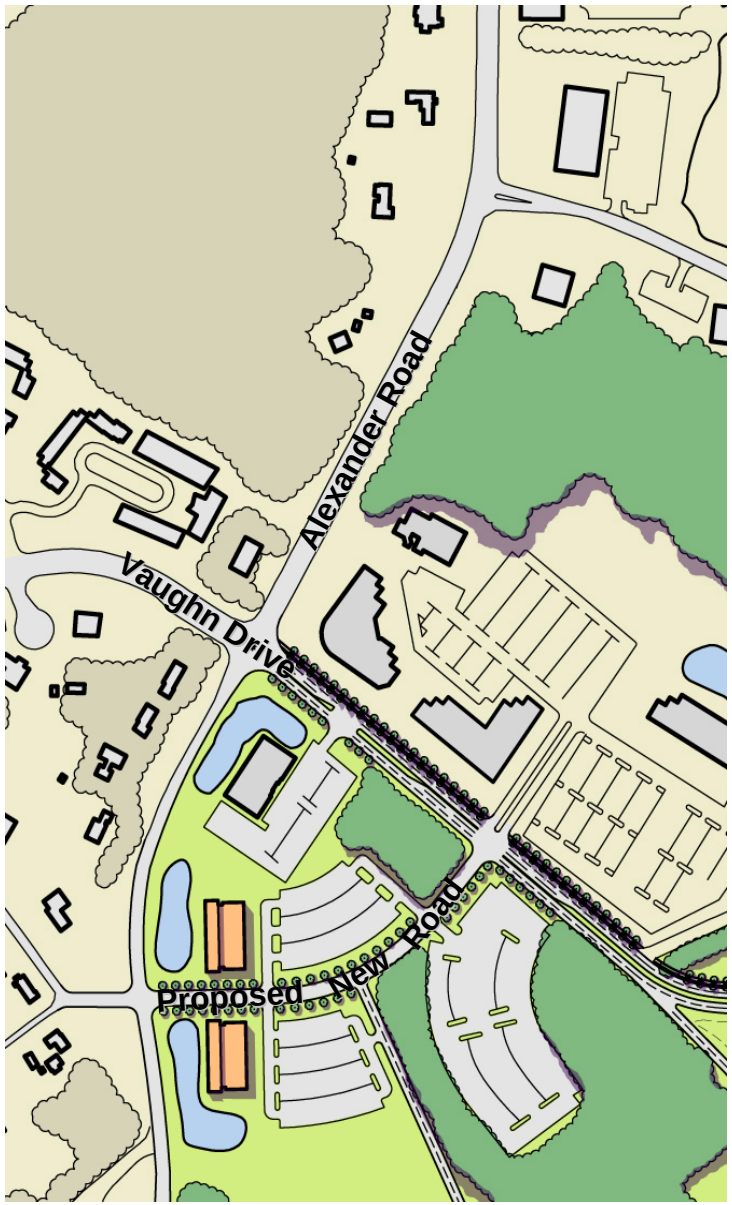
The Plan envisions the south portion of the site, along Alexander Road, as an extension of the existing low-scale commercial office park development further to the west.

The new office development would maintain the typical height - three stories or less. In addition, further development east of Vaughn Drive would present an opportunity to continue the water and green setback theme along Alexander Road, with surface parking in the interior of the new development sites.

This development will provide significant new ratables, including reclamation of the existing Township compost facility.

To provide a new redundant means for cars to get from Alexander westbound to Vaughn Drive, the Plan envisions a new street connecting Alexander to the train station and Vaughn Drive.

Development here would be transitional over time.



Existing office development on Alexander Road

Existing office development on Alexander Road

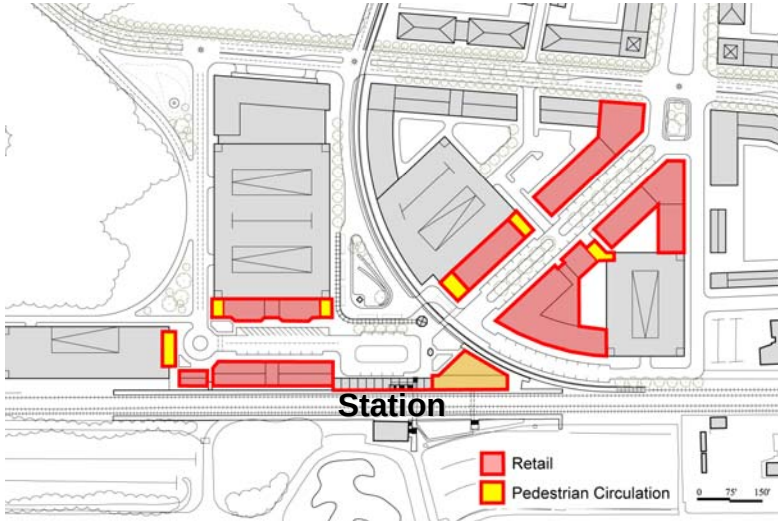
The key will be to create a place where small scale landscape elements dominate. As stations such as South Orange demonstrate, a discrete area for retail development can help bolster the chances for the street's success, and help create a more vital pedestrian environment.

The new main street is envisioned as a busy place, full of activity and people. It will function on many different levels, serving simultaneously as a:

- Place of symbolic arrival to West Windsor
- Shopping street with retail along its edges
- Meeting place for transit riders
- Place for cars and people

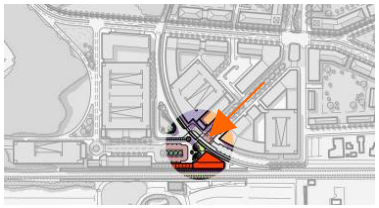
Plan of Sloane Street, South Orange, NJ

View of Sloane Street, South Orange, NJ



Main Street – diagram showing ground level uses

View of South Orange Station



View of the proposed Main Street, looking towards the station

IV. THE VISION

Places: BRT Plaza/Town Green

The BRT Plaza should be designed as a multi-use space – a place people come to commute by bus Monday through Friday and relax, read, stroll, or shop on the weekends and evenings.

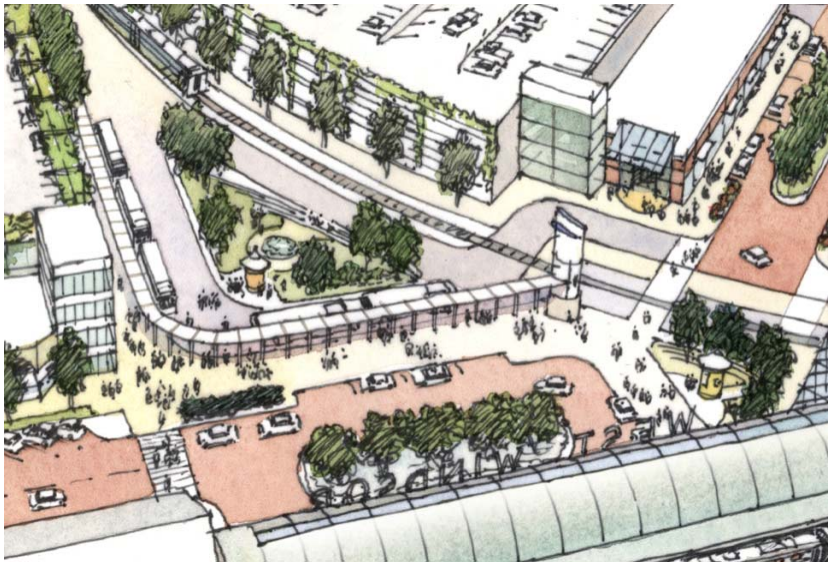
The Town Green should be large enough to hold evening concerts in the summer, as well as rallies, and other civic events.

Outdoor concert

Landscape designed to accommodate outdoor seating

Key plan

Farmers Market



Aerial view of proposed bus transit plaza and town green

IV. THE VISION

Places: BRT Plaza/Town Green

Design of both the central open space and perimeter will be important in creating flexibility. “Transit” should not be the dominant image.

Along the perimeter structures for bus waiting can be designed to double as shade elements or stalls for weekend farmers markets.

Design inspiration for a continuous outdoor bus canopy, Orchard Beach, N.Y.

Example of a canopy structure designed to accommodate Farmers Market stalls

IV. THE VISION

Places: BRT Plaza/Town Green

The proposed Town Green is comparable in scale to Palmer Square in Princeton, which accommodates a wide range of activities.

Palmer Square, Princeton, N.J.

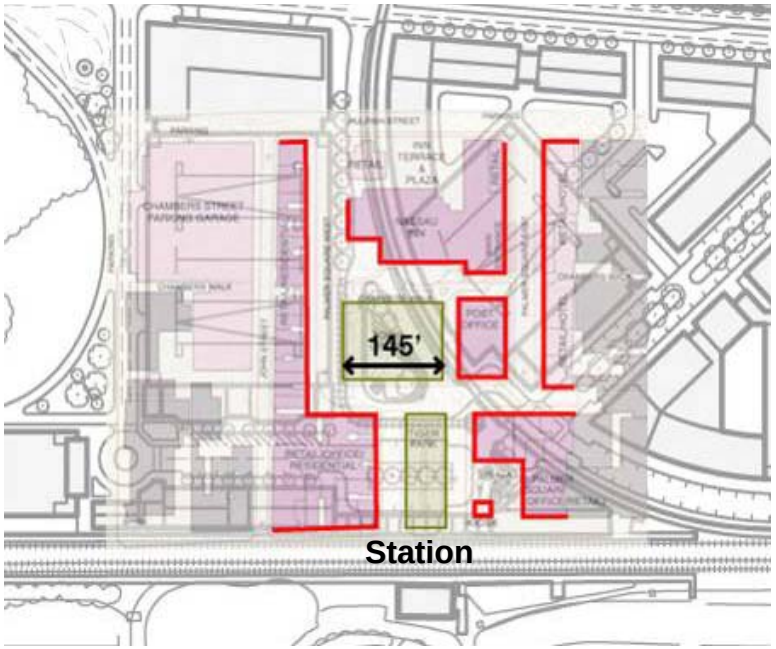


Diagram overlaying Palmer Square on the plan of the proposed BRT Plaza/Town Green

Palmer Square, Princeton, N.J.

IV. THE VISION

Places: BRT Plaza/Town Green

The new Town Green can be designed to work with or without the Dinky. The elimination of the Dinky would open up opportunities for ground level retail uses in the garages along the perimeter of the BRT Plaza. The tracks themselves could be retained as a special landscape element that provides a trace of the past.

Replacement of the Dinky with BRT provides opportunities for improved vehicular, bus and pedestrian circulation at the station. However, in advance of this possibility, the presence of the Dinky eliminates the opportunity to locate ground level retail along the Dinky right-of-way. As such, the ground level of the garages should be flexible to accommodate potential conversion to retail.

Example of a curved parking garage façade as shown in the block west of the BRT Plaza, Cambridge, Mass.

Example of landscape potential for the Dinky right-of-way

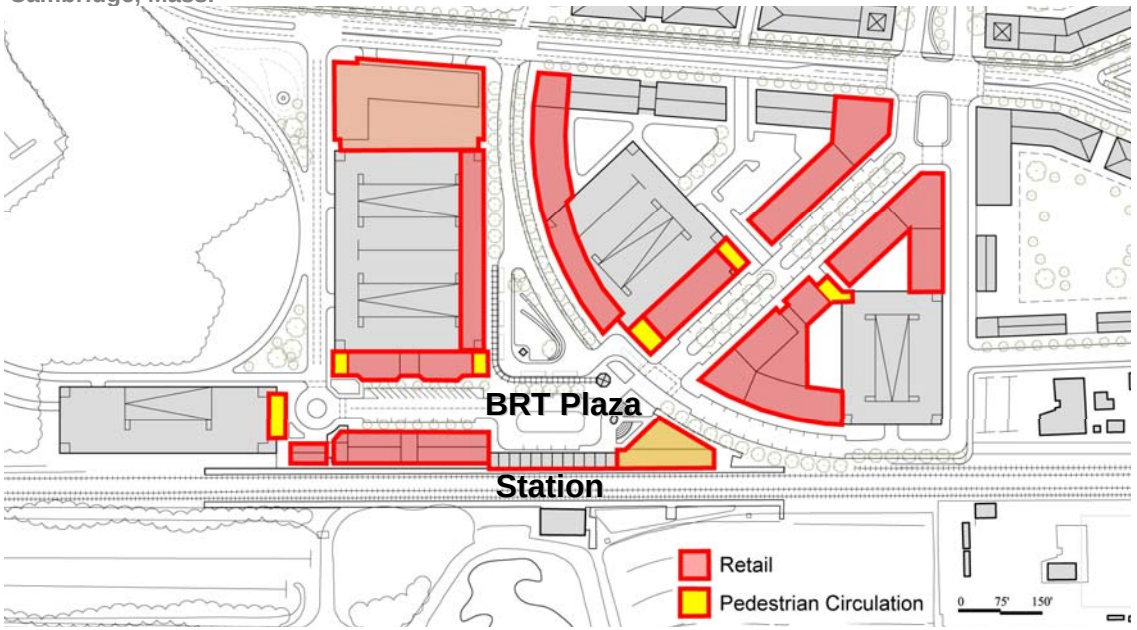


Diagram of ground level uses if Dinky is eliminated

The edge of the new Washington Road Residential Neighborhood would preserve and build upon the existing character of Washington Road in the established neighborhoods to the west, where a stately canopy of mature trees lines the road.

This grand image of trees along Washington Road would be continued to the end of that street, while buildings are set back along a service lane. The service lane would also provide a quieter zone for drop-offs, parking for the residential buildings, and a connected pedestrian and bikeway system to allow current and new residents access to the Station, Village Core and the new park.

An example of a residential service street parallel to Harrison Street, Princeton, N.J.

Washington Road, west of Route 1

IV. THE VISION

Places: Long Meadow Park and Pedestrian Promenade

The proposed residential neighborhood would be anchored on its west end by a new park. The proposed “Long Meadow Park” will create an important new open space resource for West Windsor.

The new park would focus on an existing pond. The Plan envisions the pond, presently enveloped in brush as a quiet place for reflection, toy boats, etc. with passive recreational programming along its edges.

Depending on how the BRT develops along the Dinky right-of-way, the new park can also provide a new pedestrian connection to the Dinky Right-of-way from Washington Road.

A new Pedestrian Promenade will be the spine of the new neighborhood. This mall will serve as a pedestrian link to the train station for the new residential neighborhood and the Penns Neck neighborhood.

In providing a new open space resource for the station area, it will also create value for adjacent parcels.

Plan showing new Pedestrian Promenade & Long Meadow Park

Potential pond edge conditions

Example of a linear pedestrian mall

Potential programming for the pond at the proposed Long Meadow Park

IV. THE VISION

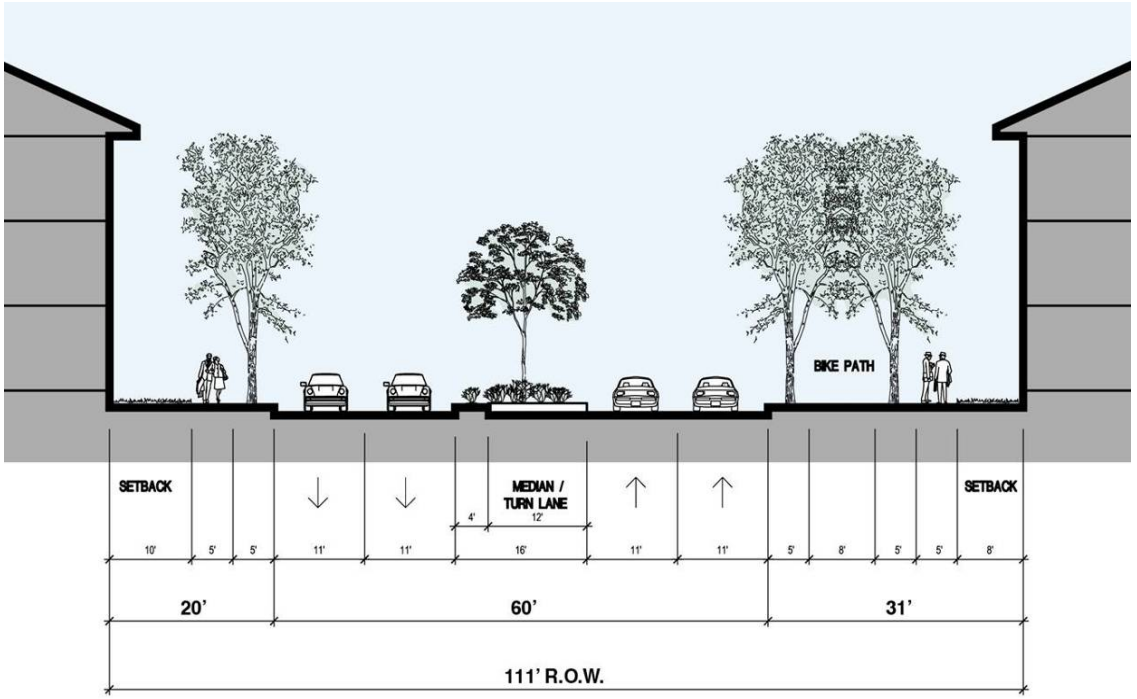
Places: Vaughn Drive Connector

The Vision Plan recognizes that implementation of the Vaughn Drive Connector can create an attractive corridor between Alexander Road and Washington Road, and in to the station, which is key to the success of any plan.

The vision for Vaughn Drive is that it will be a landscaped boulevard that balances the street's necessary through-traffic function with its potential as a commercial and residential addressing street.

The plan calls for:

- New traffic signals
- A dedicated bicycle lane
- Landscaped median
- Double row of trees to tie disparate conditions together
- Buildings set back from street
- Connected sidewalks and pedestrian crosswalks



Proposal section through the new Vaughn Drive Connector

Concept plan showing potential frontages along the new Vaughn Drive Connector

Numerous examples around the country, such as Country Club Plaza in Kansas City demonstrate that streets with similar widths and alignments can accommodate both pedestrian-oriented frontages, as well as through traffic.

Country Club Plaza, Kansas City

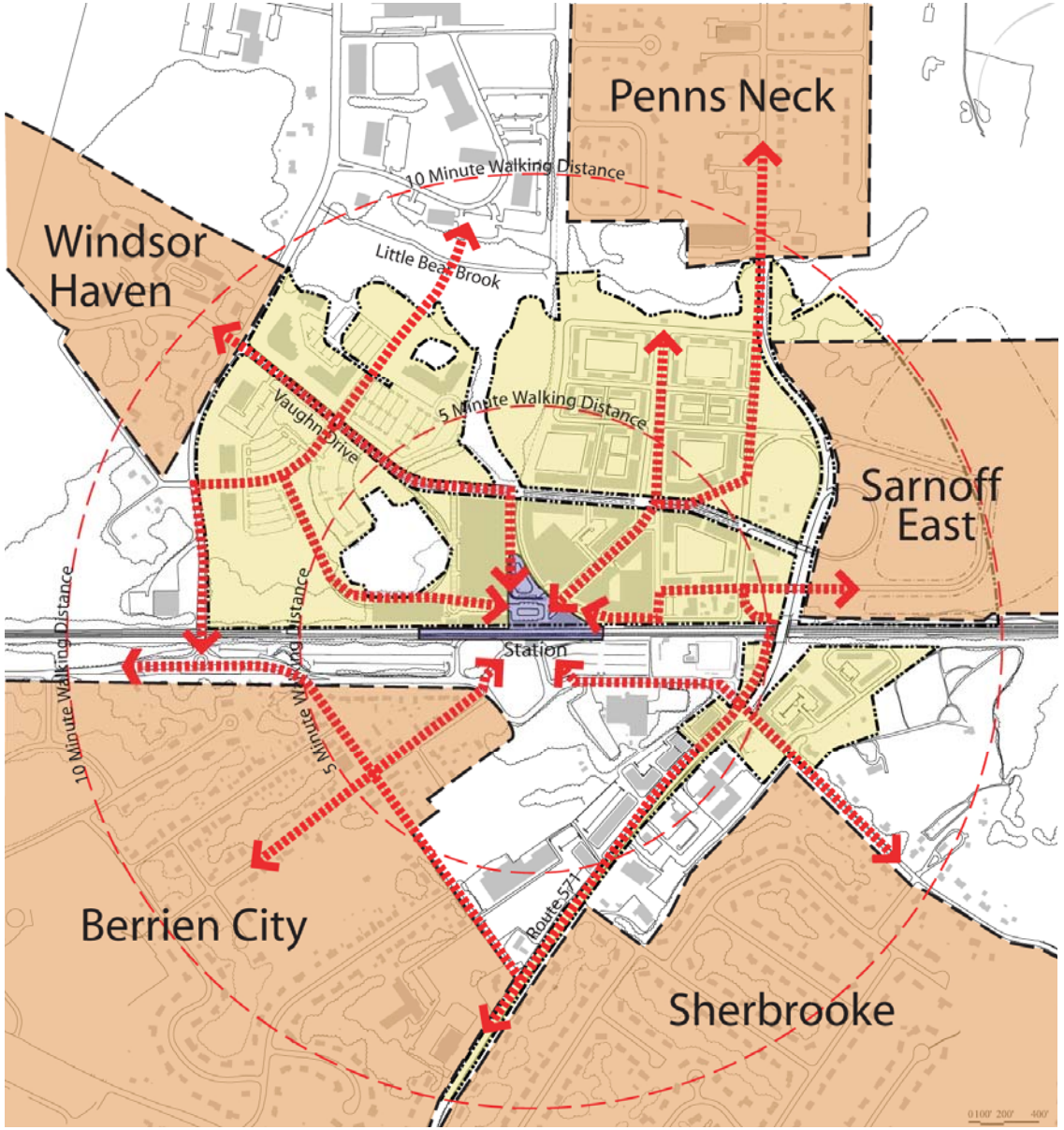
Rendering of the proposed Vaughn Drive Extension, looking south

IV. THE VISION

Proposed Access: Pedestrian Linkages

The Vision Plan creates an integrated network of pedestrian connections, linking Windsor Haven, Penns Neck and Sarnoff to the station, and allowing those neighborhoods to better access the proposed amenities and share in the benefits of being near this key regional transit node.

The plan also envisions improved connections from Sherbrooke and Berrien City along Route 571, and improved access across tracks and on to the new Main Street.

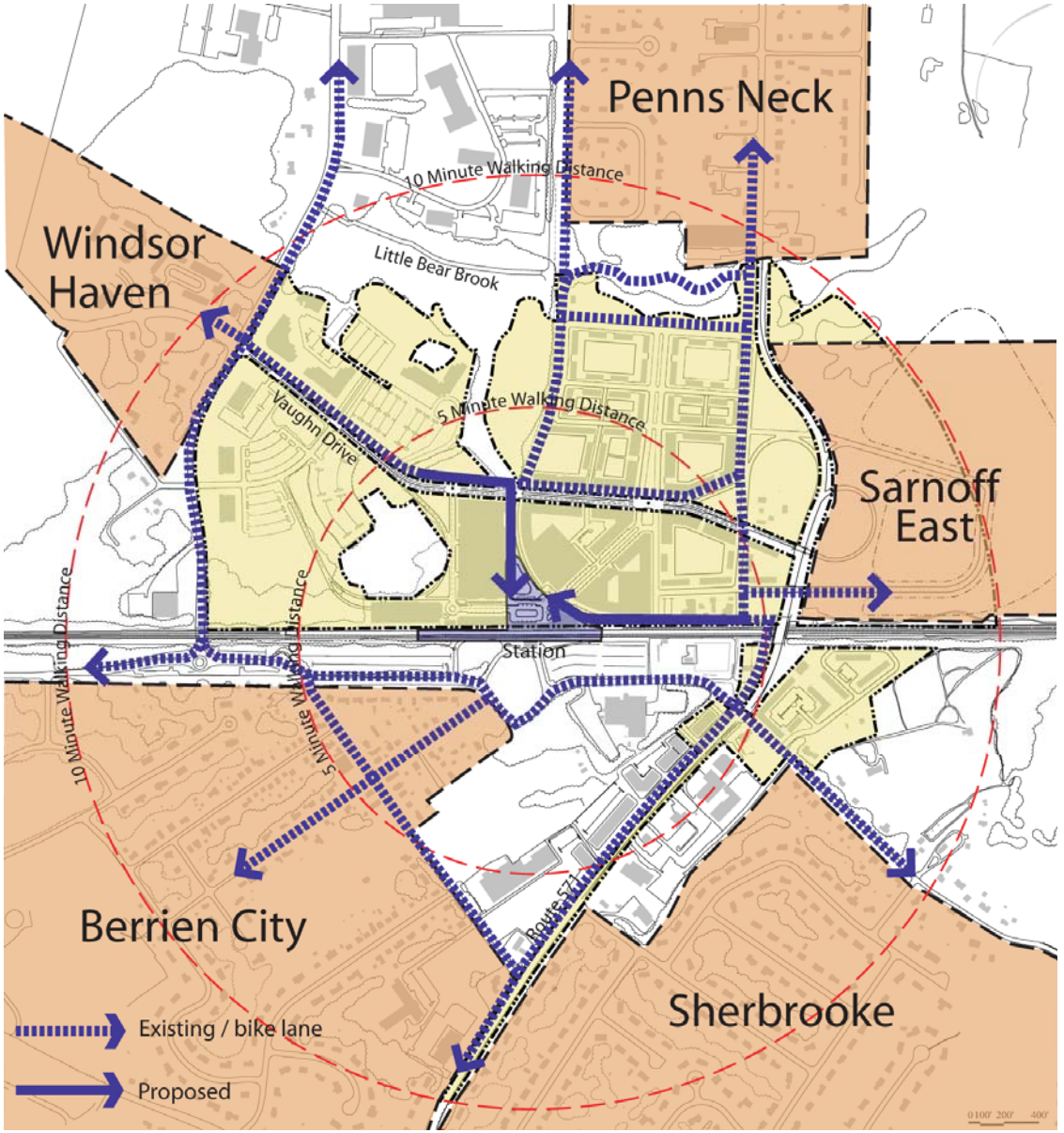


IV. THE VISION

Proposed Access: Bicycle Access

The proposed street network completes the missing link in the Township's larger bicycle route system by implementing bikeways along the Vaughn Drive Connector.

It also provides clear routes for bicycles to get to the station on the west side. This will give transit riders additional options to access the station, and help alleviate traffic congestion.



Proposed bicycle access diagram

IV. THE VISION

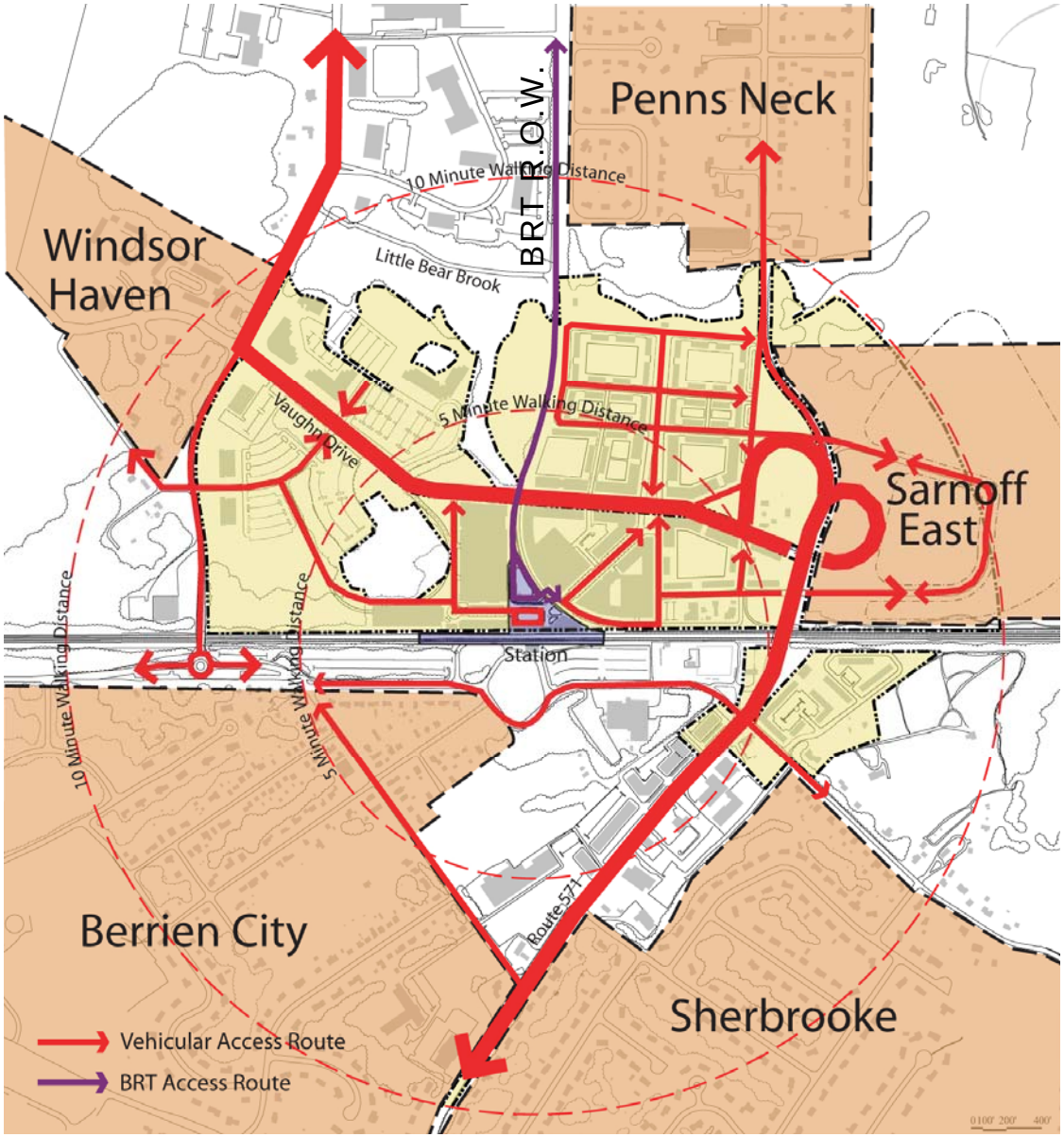
Proposed Access: Vehicular Access

The proposed vehicular access system introduces a grid of streets to disperse traffic and provide redundancy for north-south connections.

With the addition of the Vaughn Drive Connector, access to the station will be much more clear and direct.

Additional secondary north-south roads will also provide new access to Windsor Haven and Sarnoff East.

Another major feature is a new East-West street connecting the station, Penns Neck, and the new Washington Road residential neighborhood.



IV. THE VISION

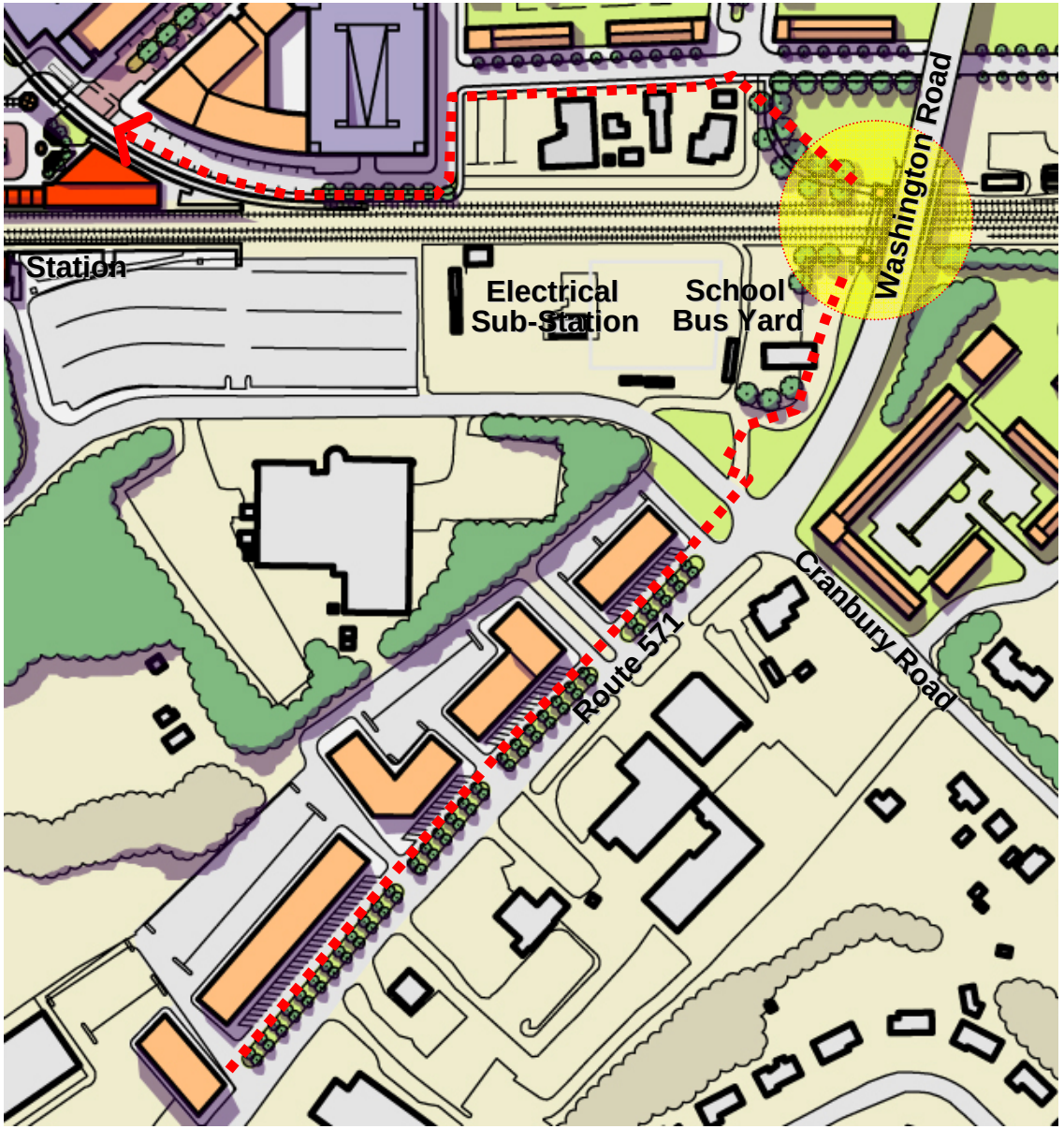
Proposed Access: Route 571

The plan proposes a new vision for Route 571 to improve access from the east side of the Northeast Corridor. This includes:

- Locating buildings closer to the street
- Creating a landscaped side median with a sidewalk and double tree canopy
- A new landscaped connection to the Washington Road Bridge, and improved pedestrian access up to the bridge itself
- A new pedestrian route to Station Drive

West Windsor Township and Mercer County are advancing a parallel, in depth analysis of the Route 571 corridor which will explore these options further.

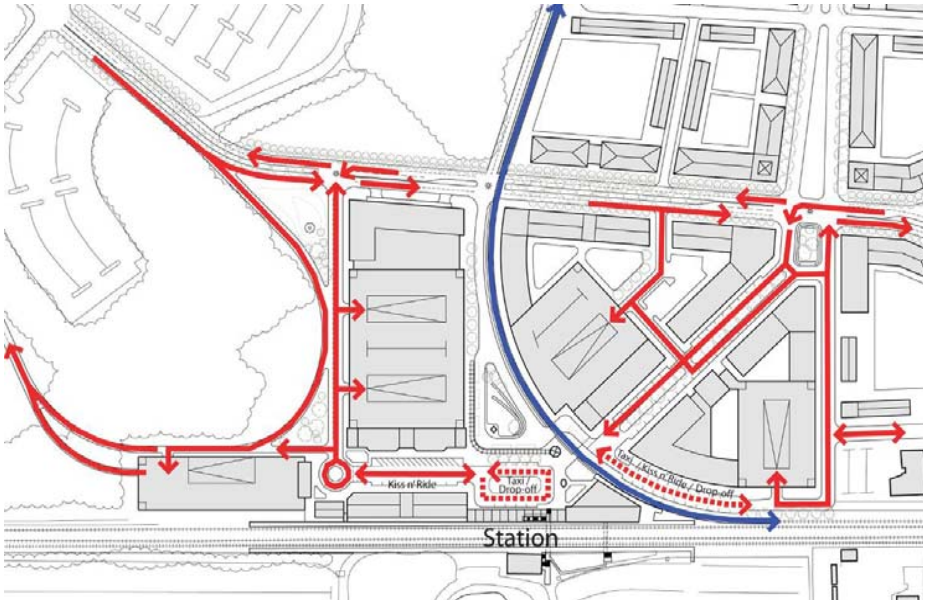
Example of pedestrian way along a landscaped median



Illustrative concept plan for Route 571

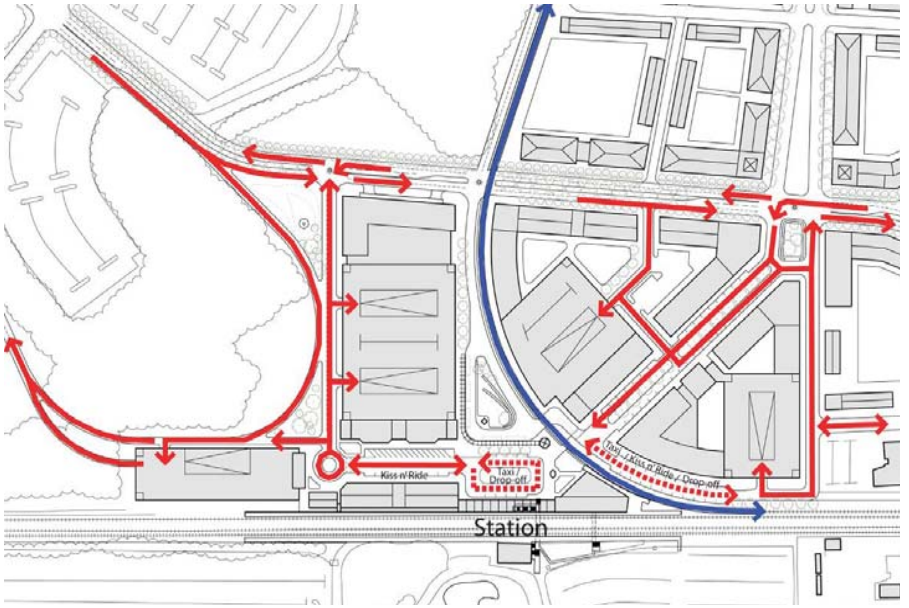
IV. THE VISION

Proposed Access



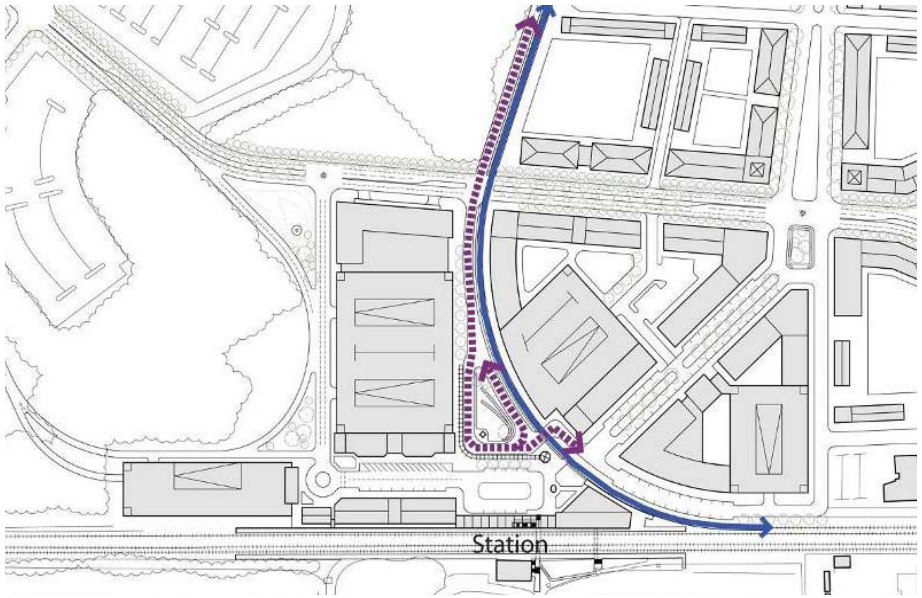
Parking Access

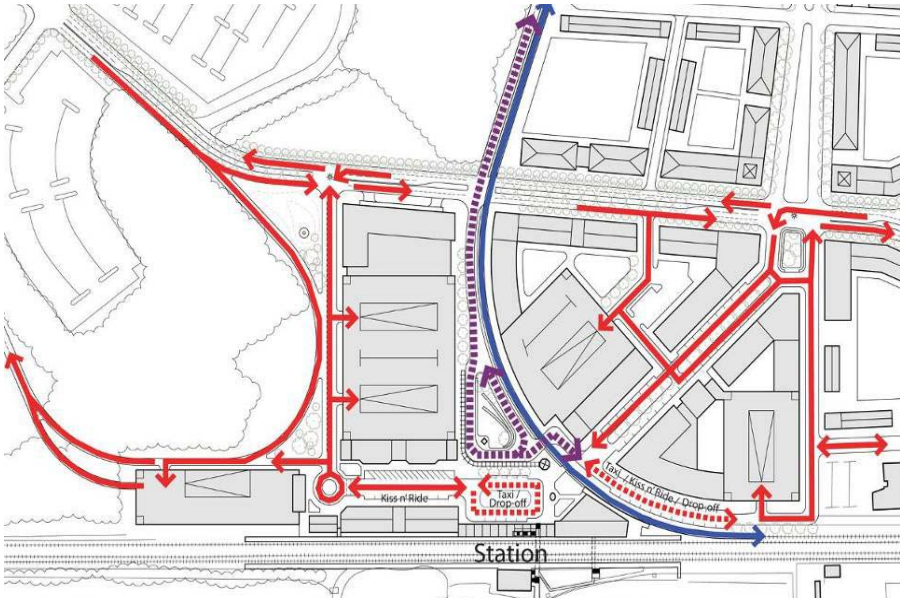
The plan calls for access to commuter garages via the proposed Vaughn Drive Connector. Garages south of the Dinky are accessed from Vaughn Drive northbound. Garages north of the Dinky are accessed from Vaughn Drive southbound. This proposal is aimed at decreasing volume on Vaughn Drive at the BRT/Dinky crossing.



Taxi and Kiss 'n Ride Access

The plan directs Taxi and Kiss 'n Ride access from Vaughn Drive. South Bound and North Bound movements are directed to different points, thereby dispersing traffic in the Village Core and decreasing volume on Vaughn Drive at the BRT/Dinky crossing





BRT

With the most promising route for the BRT along the right-of-way of the existing Dinky, the Plan shows the Dinky coming into the station area directly adjacent to the Dinky tracks. This allows for the most direct pedestrian connection between the Dinky platform, taxi loading area, the Northeast Corridor platform, and the tunnel to the southbound platform.

More detailed plans are underway in the parallel effort to study BRT alternatives sponsored by NJ Transit.

Village Core Area

- Minimizes conflicts between BRT, taxi, Kiss ‘n Ride drop-offs, and commuter parking.
- Pedestrian connections to the parking garages and the BRT plaza are uninterrupted.

IV. THE VISION

Proposed Access: Traffic Conditions

As part of the West Windsor/Princeton Junction Station Area Vision Plan, the team's traffic sub-consultant Eng-Wong Taub, evaluated future traffic conditions on the proposed Vaughn Drive Connector, assuming full build out of the preferred development option for the study area. The first step was to determine the lane capacity (or saturation flow rate) of the Vaughn Drive Connector. This was computed using the 2000 Highway Capacity Manual (HCM 2000) procedures. The next step was to determine the projected generated traffic for the preferred development option for the study area. Based on these calculations for potential future conditions, the total volume traveling north on Vaughn Drive during the AM peak period would require two lanes in the northbound direction. In addition, the total volume traveling south on Vaughn Drive during the AM peak period would require two lanes in the southbound direction. These calculations assumed a center turning lane, as well as traffic signals at the Vaughn Drive Connector's intersections with the new Pedestrian Promenade, the BRT right-of-way and the entrance to the parking garage P1. The Vision Plan also envisions sidewalks along both sides of Vaughn Drive and bicycle lanes to provide connections for pedestrians, bicyclists and vehicles to the new development nodes, existing neighborhoods and the train station.

V. Proposed Staging and Implementation

V. STAGING AND IMPLEMENTATION

Implementation and Next Steps

The development of the land at and surrounding Princeton Junction Station will take place over many years. Any development strategy for the area must therefore be resilient enough to accommodate existing and proposed transportation functions, implementation of the other initiatives proposed for the area and be sensitive to market realities. Other key implementation principles are:

The First Phase
The first key test of the Vision Plan will be the first phase. The first phase is important in establishing the credibility of the development, and its level of quality. This in turn, will assist in creating value for, and encourage, future development, and decrease risk factors for future investment.

As such, the first phase should:
- look complete
- be large enough to create a quality environment, but not so large as to require excessive risk

Incremental Development
The Vision Plan has been developed to allow for incremental development. The key is for certain site organizational principles to guide individual development, to ensure that new development will be coordinated and will not preclude larger goals, such as key connections to the station, etc. Locating new streets along existing property lines will also provide increased flexibility in phasing private development.

Staging of development should be coordinated with the implementation of the Alexander Road, Vaughn Drive and BRT projects
Property acquisition for the Vaughn Drive Connector and Alexander Road Bridge rehabilitation/reconfiguration will be by NJDOT.

Parking strategy needs to accommodate construction staging.
As new development and other infrastructure projects, such as the BRT system, are implemented, interim commuter parking solutions should be integral to the planning process.

Shared Parking
To capitalize on the mix of uses in the village core, shared parking strategies should be also considered. Studies have shown that uses such as residential and entertainment, or office and residential have complementary needs that allow parking spaces to be more fully utilized over the course of a 24 hour cycle. Shared parking has been utilized in Princeton borough and elsewhere, and can reduce overall parking need by over 10%.

NEXT STEPS

Township of West Windsor

- Complete Route 571 Study
- Complete “Area in Need of Redevelopment” Process
- Create a Station Area Redevelopment Plan (new zoning)

NJ TRANSIT

- Complete BRT Study
- Once Township zoning can accommodate the vision, work with Township to create a request for proposal for Phase I

NJDOT

- Design and implementation of Alexander Road Bridge
- Design and implementation of Vaughn Drive Connector

V. STAGING AND IMPLEMENTATION

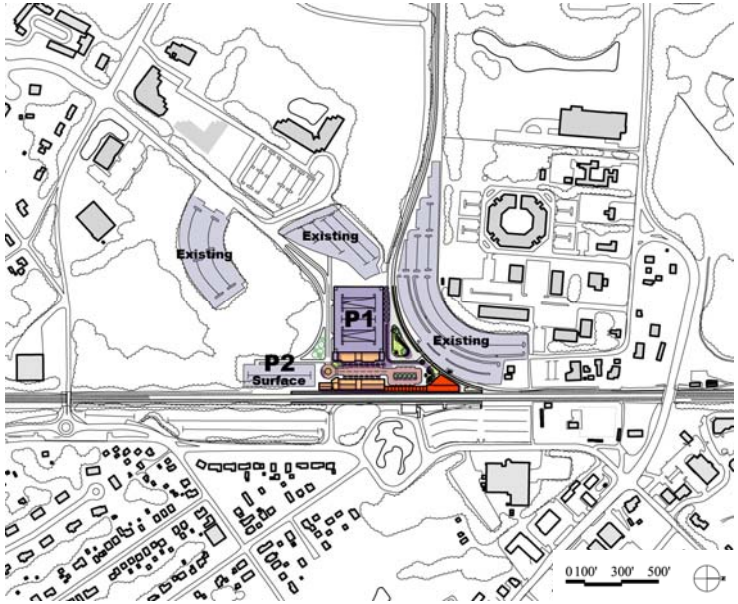
Proposed Staging: Phase I *(with or without Vaughn Drive Connector)*

Because of the number of unknowns regarding parallel initiatives, the phasing possibilities are numerous. The discussion that follows shows two likely scenarios for how initial phases could unfold.

It does not however, address more detailed issues of construction phasing and necessary interim measures, which will likely be addressed at a later stage in the process when the big picture and parallel initiatives are finally determined.

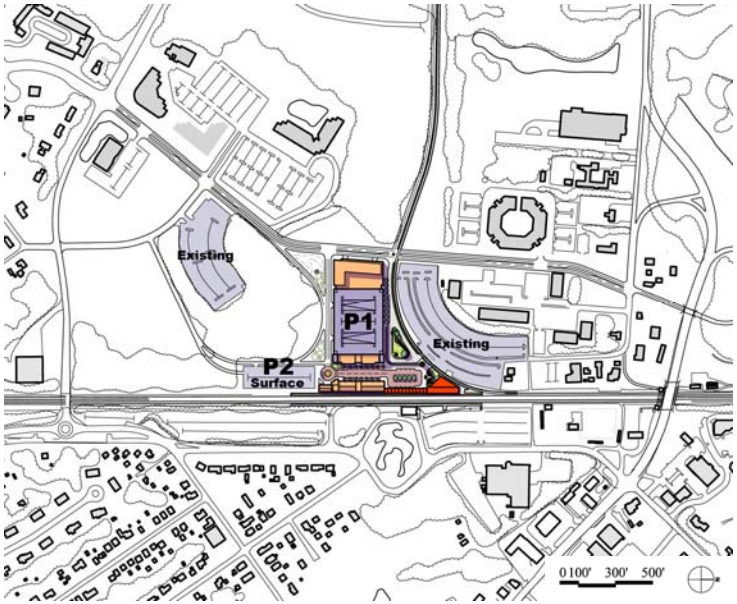
Numerous public improvements will be created as a part of either two phasing alternatives.

Along with upfront improvements, the framework for larger scale pedestrian and bicycle connections are set in place.



Stage I - Initial development *precedes* Vaughn Drive Connector

- All development on south side of Dinky
- Creates a new arrival “place” for residents, visitors, and commuters
- BRT Plaza/Town Square
- First segment of “Main Street” retail
- New Garage P1 (Surface lot P2 remains)
- Program:
  - Retail: 30,000 SF
  - Potential residential over retail
  - Commuter parking increase by 400 spaces (about 10% over existing)



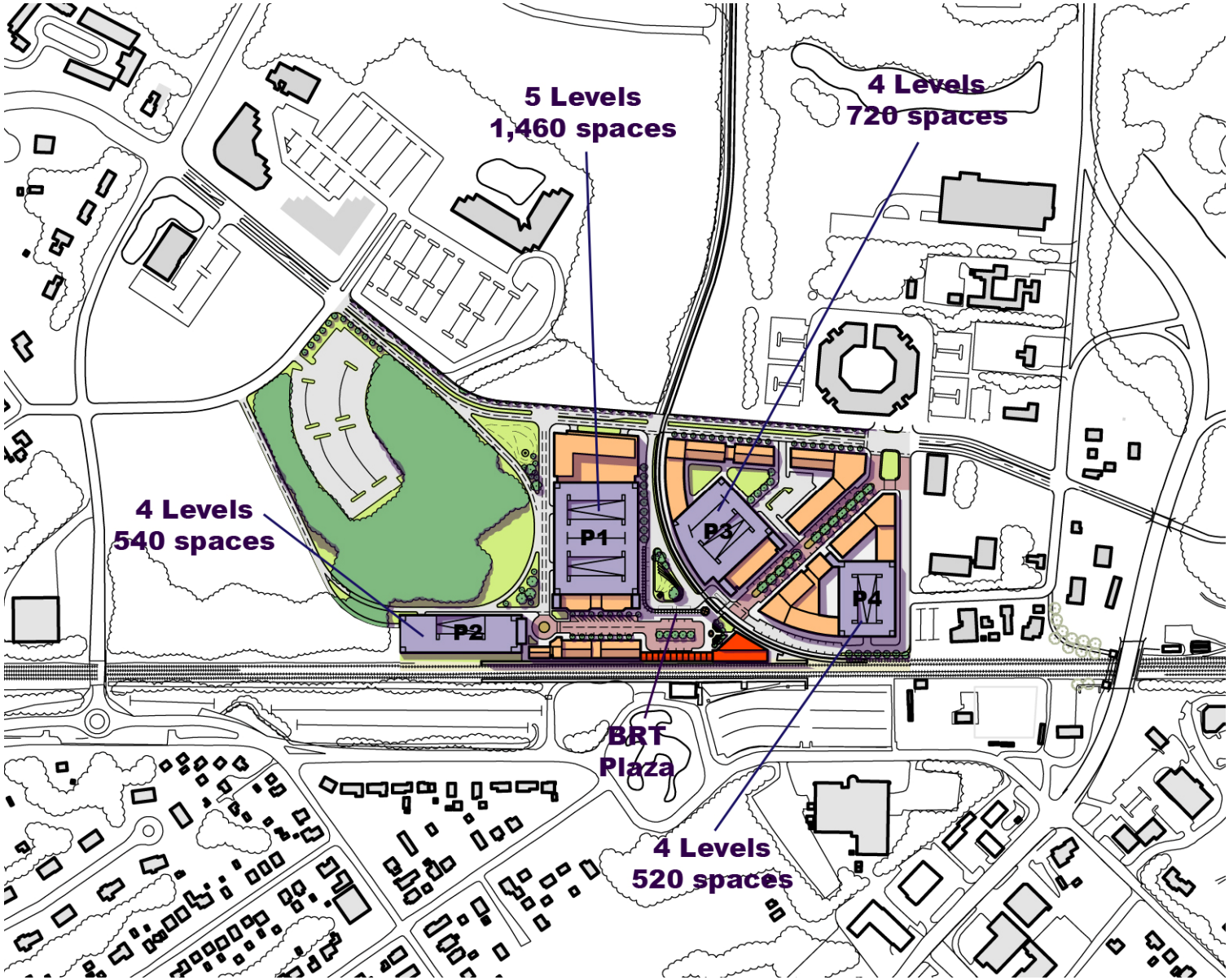
Stage 1/Alternate - Vaughn Drive Connector comes first

- All development on south side of Dinky
- Creates a new arrival “place” for residents, visitors, and commuters
- BRT Plaza/Town Square
- New Vaughn Drive Connector and associated sidewalks, streetscape, and bike paths
- First segment of “Main Street” retail
- New Garage P1 (P2 can remain as surface parking)
- Program:
  - Retail: 30,000 SF
  - Commercial / Hotel – 90,000 SF – *(or residential)*
  - Commuter parking increase by 100-200 spaces (about 5% above existing if surface lot P2 remains. If P2 becomes structured parking then the commuter parking increases about 15% over existing)

V. STAGING AND IMPLEMENTATION

Proposed Staging: Phase II - Village Core

- Vaughn Drive Connector must be in-place for this stage to be fully-realized
- Complete “Village Core South” mixed-use development
- Stronger pedestrian and bicycle connections established
- Program:
  - Retail: 120,000 SF
  - Commercial / Hotel: 90,000 SF
  - Residential: 220 units
  - Open Space/Plaza: 65,000 SF
  - Commuter parking increases by 360 spaces (about 10% over existing 3,635 parking spaces)



V. STAGING AND IMPLEMENTATION

Illustrative Site Plan of the Completed Vision

The proposed development program illustrated here must balance between the densities necessary to create economically viable mixed-use, pedestrian-oriented development, and preserving the Vaughn Drive Connector's function as a through street connecting Route 571 and Alexander Road. In the end the key measurement will be insuring that drivers choose Vaughn Drive over roads going through the Berrien City, Sherbrooke, and Penn's Neck residential neighborhoods.

Program:

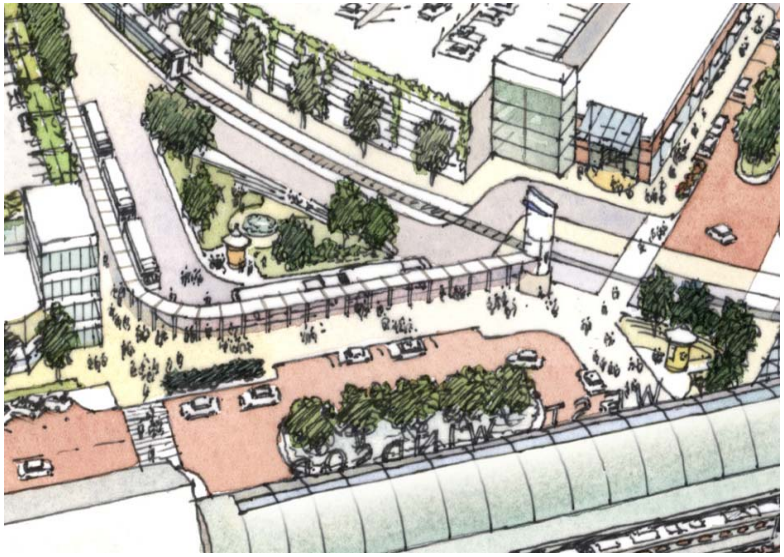
- Retail: 120,000 SF
- Hotel: 90,000 SF
- Office: 85,000 SF
- Residential: 800 units
  - – (350 units in Village Core and 450 units in Washington Road Neighborhood)
- Commuter parking: 360 space increase
  - – (10% increase over the existing 3,635 parking spaces)
- Open Space: Over 9 acres
- Complete bicycle and pedestrian connections

V. STAGING AND IMPLEMENTATION

Images of the completed vision

Main Street connects between BRT plaza and New Washington Road Residential Neighborhood

Proposed Main Street looking towards Princeton Junction Station



View of proposed BRT Plaza and new station entrance

View of proposed Vaughn Drive extension looking south

ACKNOWLEDGEMENTS

Township of West Windsor

Shing-Fu Hsueh, *Mayor*

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Alison Miller, *Township Council Vice President*

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Architects and urban designers

Eng-Wong, Taub & Associates

Traffic & Transportation Consultants

Frank Costantino

Renderer

VI. Appendices

APPENDIX 1

Traffic Estimates for Vaughn Drive Connector

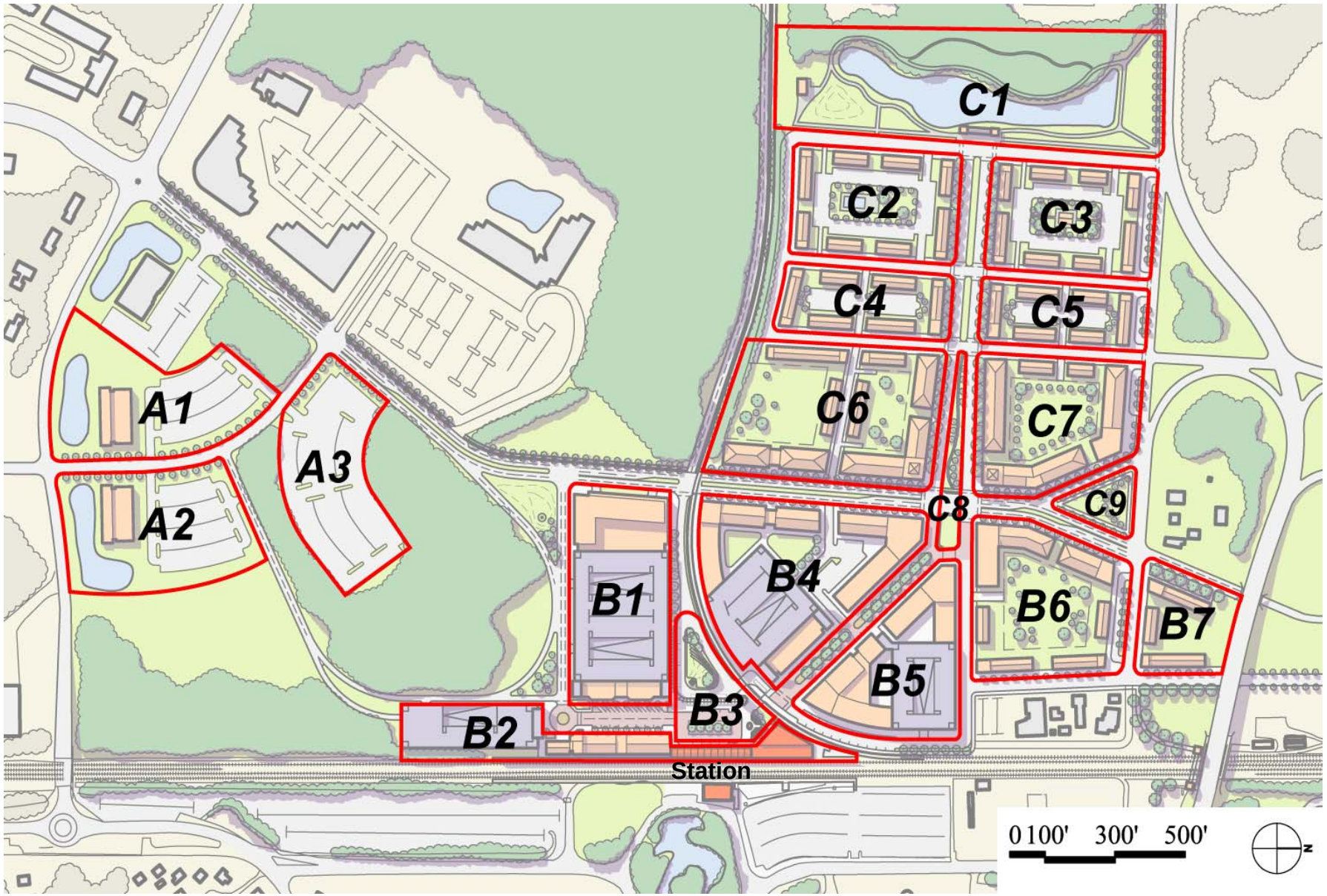
Vaughn Drive Connector Capacity

Assumption: LOS D - Marginally acceptable
Two lanes in both directions (second lane converts to parallel parking in off-peak hours), with center turning lane

Land Use	Development Program	T.G. Rate AM	Units	Trips AM Peak hour	T.G. Rate PM	Units	Trips PM Peak hour	AM % reduction	PM % reduction	Add'l trips on Vaughn AM	Add'l trips on Vaughn PM
Commuter Parking (net change from existing)	360							108		108	108
Office	175,000	1.55	per 1000 sf	271	1.49	per 1000 sf	261	10%	10%	244	235
Residential	800	0.3	per unit	240	0.39	per unit	312	30%	30%	168	218
Retail	120,000	6.84	per 1000 sf	821	5.02	per 1000 sf	602	90%	32%	82	410
Kiss and Ride option										18	18
New Development Trips										**620**	**989**
Future NB on Vaughn from Penns Neck EIS										570	600
Future SB on Vaughn from Penns Neck EIS										900	490
Future NB										811	1,143
Future SB										1,279	934
Future New Developments - Total Vaughn										**2,090**	**2,079**

APPENDIX 2

Development Sites – (Key plan refers to development program chart on following page)



APPENDIX 2

Proposed Development Program

BLOCK	DEVELOPMENT									COMMUTER PARKING (Number of Spaces)
	OFFICE (Square Feet)	Parking Required *	RETAIL (Square Feet)	Parking Required *	RESIDENTIAL (Units)	Parking Required *	OPEN SPACE (Square Feet**)	TOTAL PARKING REQUIRED	TOTAL PARKING PROVIDED	
A1	42,000	105		0		0		105	105	
A2	42,000	105		0		0		105	105	
A3		0		0		0		0	0	330
B1	90,000	225	11,000	17	10	15		257	242	1,204
B2		0	19,000	29		0		29	29	547
B3		0		0		0	65,000	0		
B4		0	36,000	54	160	240		294	279	426
B5		0	54,000	81	50	75		156	156	364
B6		0		0	105	158		158	158	
B7		0		0	30	45		45	45	
C1		0		0	0	0	325,000	0		
C2		0		0	40	60		60	66	
C3		0		0	40	60		60	63	
C4		0		0	30	45		45	59	
C5		0		0	35	53		53	54	
C6		0		0	160	240		240	243	
C7		0		0	140	210		210	213	
C8		0		0		0	20,800	0		
C9		0		0		0	26,600	0		
TOTALS	174,000	435	120,000	180	800	1,200	437,400	1,815	1,817	2,870

** Parking Ratios:*
OFFICE = 2.5 spaces per 1000sf
RETAIL = 1.5 spaces per 1000sf
RESIDENTIAL = 1.5 per unit

*** Open Space (1 Acre = 43,560sf)*

EHRENKRANTZ ECKSTUT & KUHN ARCHITECTS