



Rockford Rail Siting Analysis Basis of Design

April 1, 2024



SB FRIEDMAN
ECONOMIC
ANALYSIS



SAM SCHWARTZ
TRANSPORTATION
ENGINEERING



JACOBS
RAIL
ENGINEERING

TABLE OF CONTENTS

1. BASIS OF DESIGN	4	4. DETAILED STATION AREA PLANNING	28
a. Purpose, Scope, and Key Questions		a. Station Location	
b. Executive Summary		b. Parking	
c. Study Area Boundaries		c. Access & Drop-Off	
2. WHAT ARE THE BUILDING BLOCKS OF THE RAIL FACILITY?	8	5. HOW CAN WE OPTIMIZE ECONOMIC DEVELOPMENT? (MARKET DEMAND & STRATEGIES) . . .	34
a. Ridership Assumptions		a. Freeing Up Land for Development	
b. Historic Station at Rockford		b. Accessing Underdeveloped Land	
c. Station Type and Recommended Amenities		c. Streetscape Study	
i. Rolling Stock		d. Transit-Oriented Development	
ii. Platform Design		e. Market Study	
iii. Metra Platform Constraints		f. Market Demand	
iiii. Sample Station Sites		g. Pipeline Projects	
3. HOW WILL PASSENGERS ACCESS THE STATION?	16	h. Market Conclusions	
a. Multimodal Access		6. SITE PLAN REVIEW	45
i. Pedestrian Access		a. Site Plan Review	
ii. Bike Access		b. Key Takeaways and Decisions	
iii. Transit Access		7. APPENDIX	52
iv. Vehicular Access		a. Ridership Assumptions	
v. Safety Near the Station Site		b. Levels of Service	
		c. Platform Design	
		d. UP Belvidere v CN Freeport	
		e. Siting Considerations	
		f. Station Location Possibilities	
		g. South Station Evaluation	

a. Purpose, Scope, and Key Questions

Siting and planning a new rail station is among the most consequential decisions a City gets to make. Some rail stations anchor their community and serve as a catalyst for economic development. While others end up serving only the narrowest possible purpose—boarding and disembarking rail passengers—and provide little ripple effect. This study aims to provide rail facilities in the City of Rockford with the capacity to each reach its full potential as a development catalysts.

The long term success of this project is grounded in the quality of the starting assumptions and projections. The Basis of Design is the document that establishes these baseline assumptions, strategies, and parameters for siting and planning the station and for demonstrating future development potential. The Scope of Work asks the Project Team to draft a preliminary program of the following elements

1. Rail-related facilities (platform, station structure, drop off,etc.)
2. Station Access: (walkpaths, streets, and parking)
3. TOD Development potential: (new housing and commercial uses)

b. Executive Summary

Thanks to strong and sustained local advocacy and support from the Governor and Illinois Legislature passenger rail service will be reintroduced to Rockford in the next five years. This study was undertaken to provide a planning and design roadmap for that reconstituted rail service. This project started pre-pandemic and spanned parts of four years, going on strategic hold to allow key decisions to be made.

This report answers these strategic questions:

1. Among a handful of choices which is the optimal track alignment to serve Rockford?
2. With Metra's selection as the rail operator what is the optimal train consist?
3. What length platform is needed to support the proposed train consist?
4. Given the preferred site's many constraints what is the best location for the platform?
5. How should trains be stored overnight at this end of the line station?
6. What amenities should the rail station have and where should it be located?
7. How will the station interface with pedestrians, bikes, ride share, kiss'n'ride, and public transit?
8. How much parking should be provided for rail passengers and where?
9. What provisions should be made to connect to the large vacant parcel with long-term TOD potential to the south of the station?
10. What level of economic development can this new rail passenger support?

This report should be thought of as a living document, able to adjust to the real world conditions that will unfold over the next many years. If this general roadmap is followed Rockford will add a key new asset to its magnificent downtown.

c. Study area Boundaries



THE STUDY AREA COMPRISES ROUGHLY **34** ACRES AND IS LOCATED SOUTH OF DOWNTOWN ROCKFORD

2. WHAT ARE THE BUILDING BLOCKS OF THE RAIL FACILITY? (PROGRAM & DESIGN)

a. Ridership Assumptions: 20 Years of Projections

This facility must be planned to serve initial ridership projections as well as long-term growth into the future. Previous studies in 2004 and 2007 made ridership projections. These ridership numbers will be updated as part of an IDOT-sponsored study running in parallel with this one. The final results of that study are not publicly available.

2004 NICRI Commuter Rail Feasibility Study

This study was conducted in 2004 by the Northern Illinois Commuter Rail Initiative (NICRI), an open committee of area citizens and officials that led an effort to study the feasibility of commuter rail in Boone and Winnebago Counties. For the purpose of this study only relevant ridership data has been summarized and included in this report.

Table 2
Table VI-8 – Total Estimated Ridership Market Segment Method

Market Segment	Daily	Annual
AM and PM Home to Work	536	136,680
Off-Peak	84	21,420
Reverse Commutes	72	18,360
Special Events	35	9,400
Airport	74	20,000
Total-Average Daily	801	
Weekend	294	16,068
Total-Annual		221,928

2007 Feasibility Report on Proposed Amtrak Service: Chicago - Rockford - Galena - Dubuque

This study was conducted in 2007, following community support for a rail service. The Amtrak feasibility report looked at alternative routes and potential ridership data. Although this study is also dated, it assumed two trains per day. One train departs Chicago in the morning and one departs Dubuque in the morning. Reverse journeys take place in the evening. Table 3 shows the predicted schedule for this route. This schedule is more in line with the passenger rail service this RPC study is assuming and therefore the ridership data was considered in our assumptions.

See appendix for further study information and figures

2024 Consultant Analysis Based on Case Study Comparisons of Joliet and Grand Rapids

The consultant team prepared a comparative analysis which yielded an annual ridership in line with the earlier ridership projections, projecting 32 daily boardings at Rockford. Passenger rail service will shift the travel behavior of Rockford residents and businesses over the long term, but it will take a decade or more for Rockford boardings to achieve full potential. The ridership numbers generated by mature rail passenger markets of similar city size such as Joliet and Grand Rapids may serve as a longer-term aspirational goal for Rockford.

RIDERSHIP ASSUMPTIONS		
Study	Annual Ridership	Mileage
NICRI (2004)	21,420	90
Amtrak (2007)	24,700	87.3
Case Study		
Joliet (Amtrak)	16,188 (64 daily boardings)	37
Grand Rapids (Amtrak)	20,297 (80 daily boardings)	176
Assumption Average	23,060	
Range (15% buffer)	19,061 - 26,519	

b. Historic Station at Rockford

The Illinois Central Railroad provided passenger rail service to Rockford starting in the late 19th Century until the 1950's. There were two railroad stations built on the same plot of land at 815 South Main Street. The first was torn down in 1953 and replaced that same year. The second station was torn down in 1958.



c. Station Type and Level of Amenities

The reintroduction of passenger rail service raises the question of what rail station facility should serve the travelling public? This page outlines the minimum recommended amenities the station should contain.

Recommended Amenities

The following amenities associated with a Medium station are recommended to enhance the user experience at the Rockford station:

Sheltered waiting area
 Parking
 Transit and Bus Access
 Taxi access
 Restrooms
 Drinking Fountain
 Trash Receptacle
 Security Kiosk/Call Box

Public Private Partnership

Nearby private development may be the best place to provide the amenities listed above. Refer to pages 27-31 for station area planning study and recommendations.

AMTRAK STATION TYPES

	Large	Medium	Caretaker	Shelter
Projected Annual Ridership Thresholds	Greater than 400,000	100,000 to 400,000	20,000 to 100,000	Less than 20,000
Route Service Type				
High Speed Rail	●	●	○	○
Corridor Service	●	●	○	○
Long Distance Service	●	●	●	○
Station Location Environment				
High Density (Urban)	●	○		
Medium Density (Town/Suburban)		●	○	
Low Density (Suburban/Rural)			○	○
Multi-Modal Services				
Full Range (Metro/Light Rail)	●	○		
Basic (Bus)	○	●	○	
Minimal (Auto/Taxi)		○	●	●
Customer Service Staffing Level				
Fully Staffed, Management Present	●	○		
Basic Staff for Ticketing Baggage, Train Operations	○	●	○	
Caretaker, No Passenger Assistance		○	●	
Unstaffed				●
Baggage Services				
Checked Baggage/Red Cap/Package Express	●			
Checked Baggage/Agent Assistance	○	●		
None			●	●
Station Configuration				
Side Platforms	●	●	●	●
Vertical Circulation to Platforms	●	●	○	
Terminal Services	●	○		

KEY: ● Typical Characteristics

○ Service based on route type, ridership, train frequency and other considerations

This chart is a helpful reference in determining station amenities.

i. Rolling Stock

The rolling stock and operator requirements largely shape the platform design. This section will provide a summary of rolling stock and related requirements for Metra.



The Metra MDW Line operates push-pull capable gallery cars in trains to nine cars. Rockford service will attract more riders, so one car was added to each train. Adding a MP36PHI locomotive creates a 918-foot consist with a 772-foot span between doors for the 10-car trainset.

EXISTING 9-CAR METRA TRAINS

MP36PHI Locomotive creates a 833-foot train with a 687-foot span between doors



PROPOSED 10-CAR METRA TRAIN

MP36PHI Locomotive creates a 918-foot train consistent with a 772-foot span between doors



ii. Platform Length: Determined by Rolling Stock



The platform should be 805' long and 10' deep.

MDW Line trains are currently up to nine cars long. Adding a car for new Rockford region riders results in a 10-car consist, for which Metra requires an 805 feet minimum platform that is 10 feet deep. Metra gallery cars have on-board lifts for ADA access. Gallery cars are not compatible with high platforms. Illinois Code limits low platforms to no higher than eight inches above the top of the railhead (ATOR) with a face not less than 5 feet 1 inch from the centerline of track.

Station requirements include the following: Platform ends should be at least 100 feet from at-grade crossings. On single-track lines, platforms must be on the same side as station buildings or parking, if there is no building. Curved platforms are to be avoided and not to exceed 1°40". Waiting area requirements are based on peak train boardings. Metra is revising its standards with less emphasis on traditional depot buildings and ticket offices.



iii. Platform Location: Optimizing the Rail Platform

To avoid building over Main Street, the platform is limited to 800' long.

The optimal location for a roughly 800-foot-long rail platform in Rockford is constrained by critical physical features both east and west. The rail platform should start west of Main Street to avoid the costly need to upgrade or rebuilt the rail bridge over Main Street. To avoid the many problems of a curved rail platform, the platform would need to start east of where the tracks starts curving. These two constraints all but determine the location of the platform.



Platform Location Opt. A (Recommended)

- 800 feet long
- Former station site
- Just short of Metra minimum length (805 ft)
- Fits all doors (772 ft span)
- Possible to split platform if street grid extended
- Tracks #1, 2 3 used for overnight storage
- Requires extending Track #1 east of S Main St for sufficient tangency

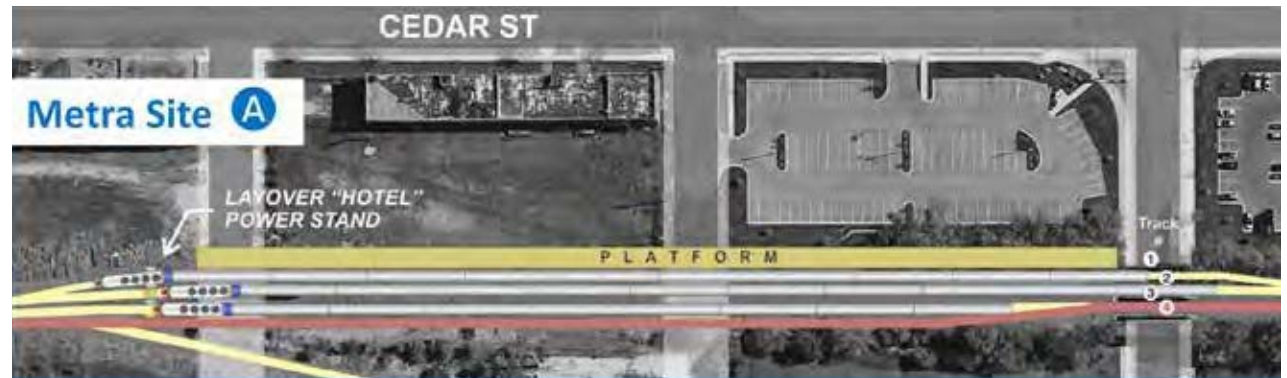
Platform Location Opt. B & C

- Not good - curved track and switches
- Not enough length available for 800' platform required

iv. Preferred Station Site: Overnight Storage Capacity



Illustrates a 10-car consist fitting all doors on an 805-ft platform. Two 10-car consists and an 8-car consist can be stored overnight on CN Rockford Depot yard tracks.



3. HOW WILL PASSENGERS ACCESS THE STATION?

a. Multimodal Access

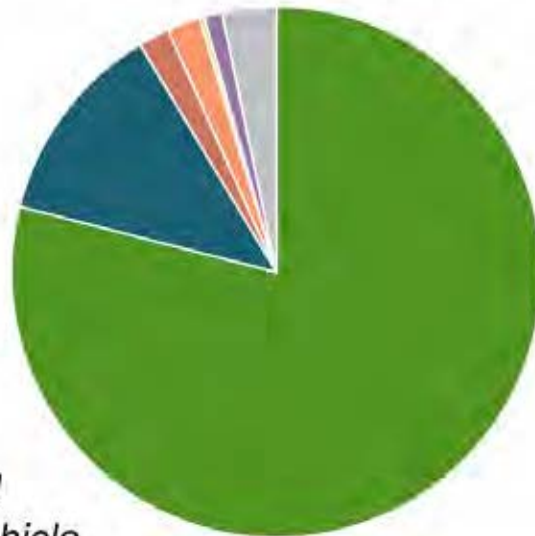
The best transit-oriented developments are anchors of their community and are readily accessible by all modes of transportation: walking, biking, public transit and private vehicles. This section seeks to identify the routes by which each mobility mode would connect to the station. The primary goal of this exercise is to identify gaps in the transportation network or strategic investments that are needed to enhance station access. These strategies will be summarized into a list of project recommendations that can pursue funding as part of the passenger rail project.

The strategic investments identified on the prior pages will be refined and updated throughout the planning process.

Rockford Station Site Access

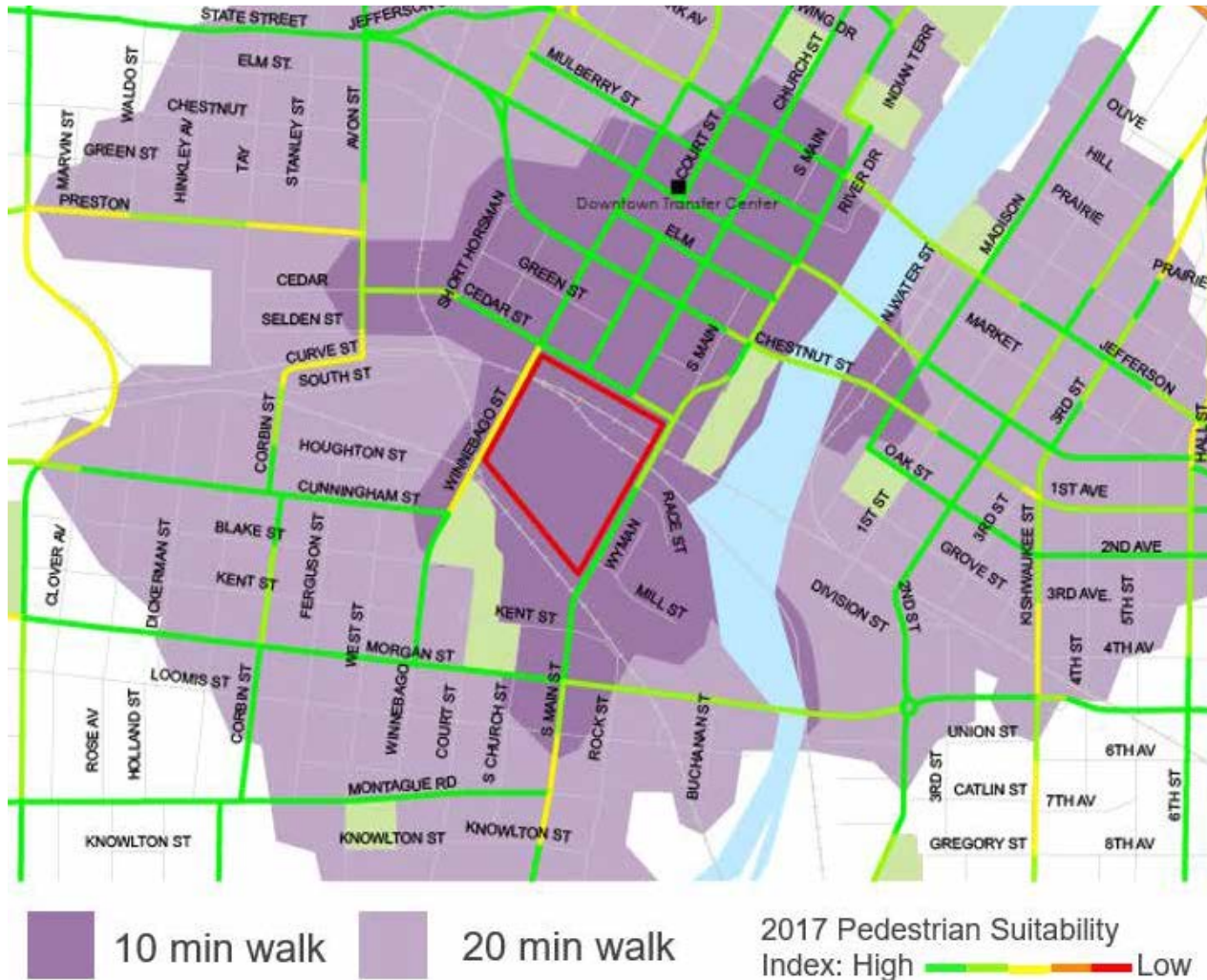
Commute characteristics:

- Drive alone – 79%
- Carpool – 12%
- Public Transit – 2%
- Walk – 2%
- Bike – 0.3%
- Taxi, other – 1%
- Work from Home – 3%



There is a desire to facilitate multi-modal access to the station, but parking and vehicle access will be important to accommodate

i. Pedestrian Access



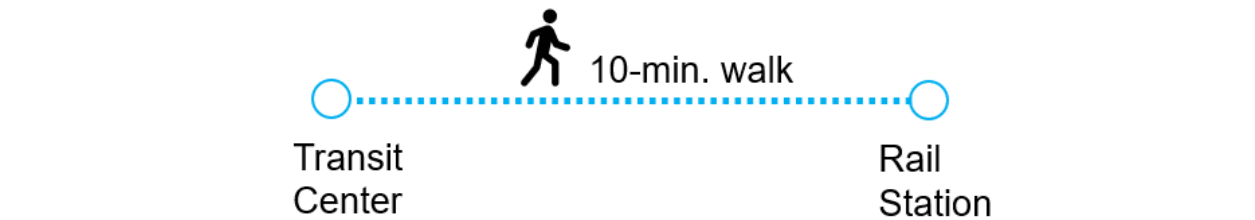
The proposed station is within easy walking distance of several dozen blocks of downtown Rockford.

Assets

- Complete sidewalk network
- Mostly intact street grid
- Small blocks

Opportunities

- Walking experience to be enhanced



In the surrounding streets, there are opportunities for:

- These pedestrian-friendly design elements listed here are difficult to implement along this section of Church Street due to it being under IDOT jurisdiction.

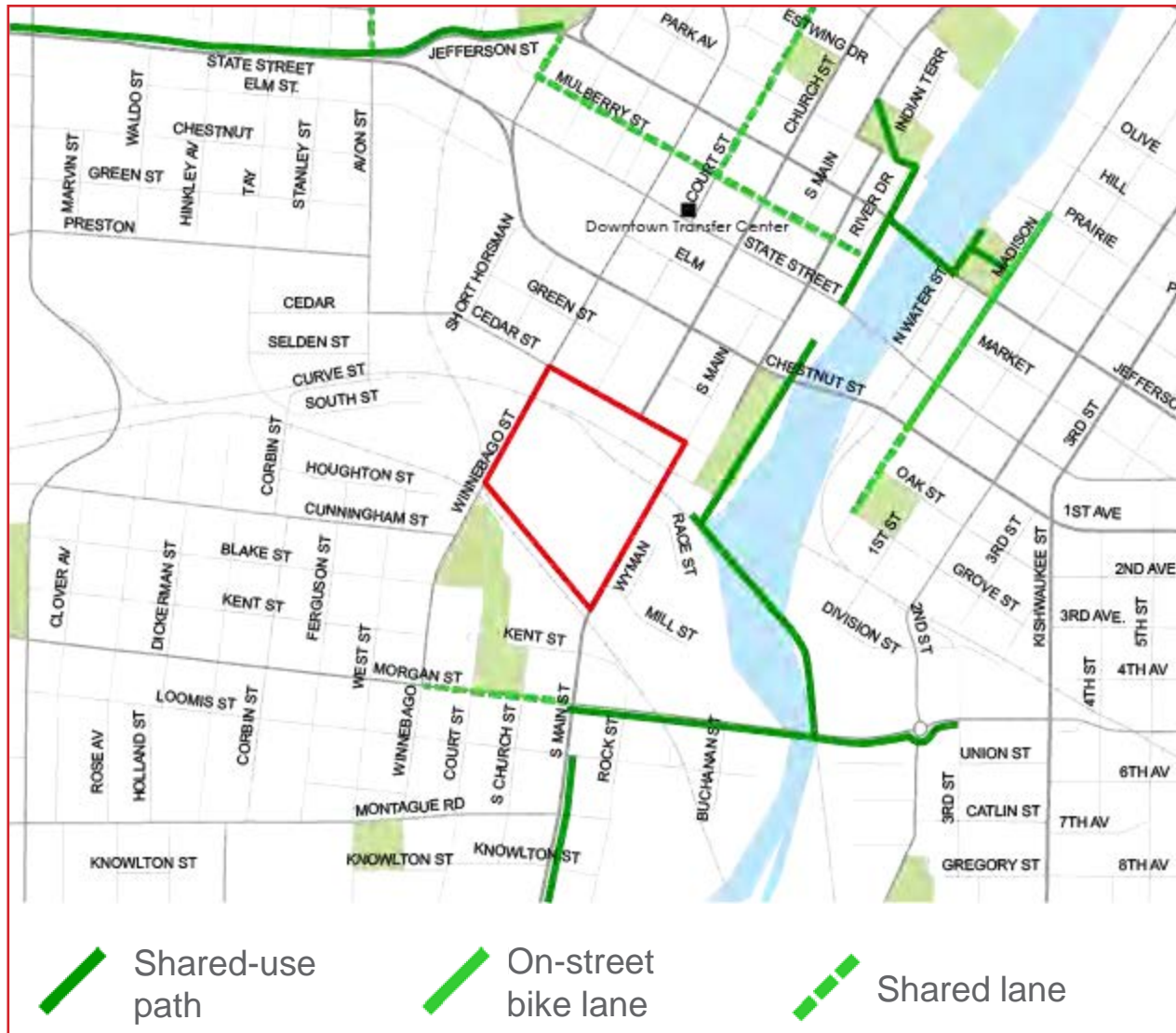
i. Pedestrian Access

Many things have changed since rail was the dominant means of getting around: there are fewer riders, tickets are electronic, and people connect to a broad range of travel modes including walking, scooters, bikes, ride share, car, and transit

- Civic and parking land uses
- Low visual interest
- Lack of tree canopy
- Mixed and parking land uses
- Opportunity to expand Main St streetscaping south to station site
- Natural and park land uses
- Opportunity to direct walking to along Founders Landing walkway
- Industrial land uses
- Low level of street activity
- Industrial and railyard land uses
- Railyard is currently a barrier
- Provides connectivity to residential neighborhood and commercial district near Morgan St



ii. Bike Access



ASSETS

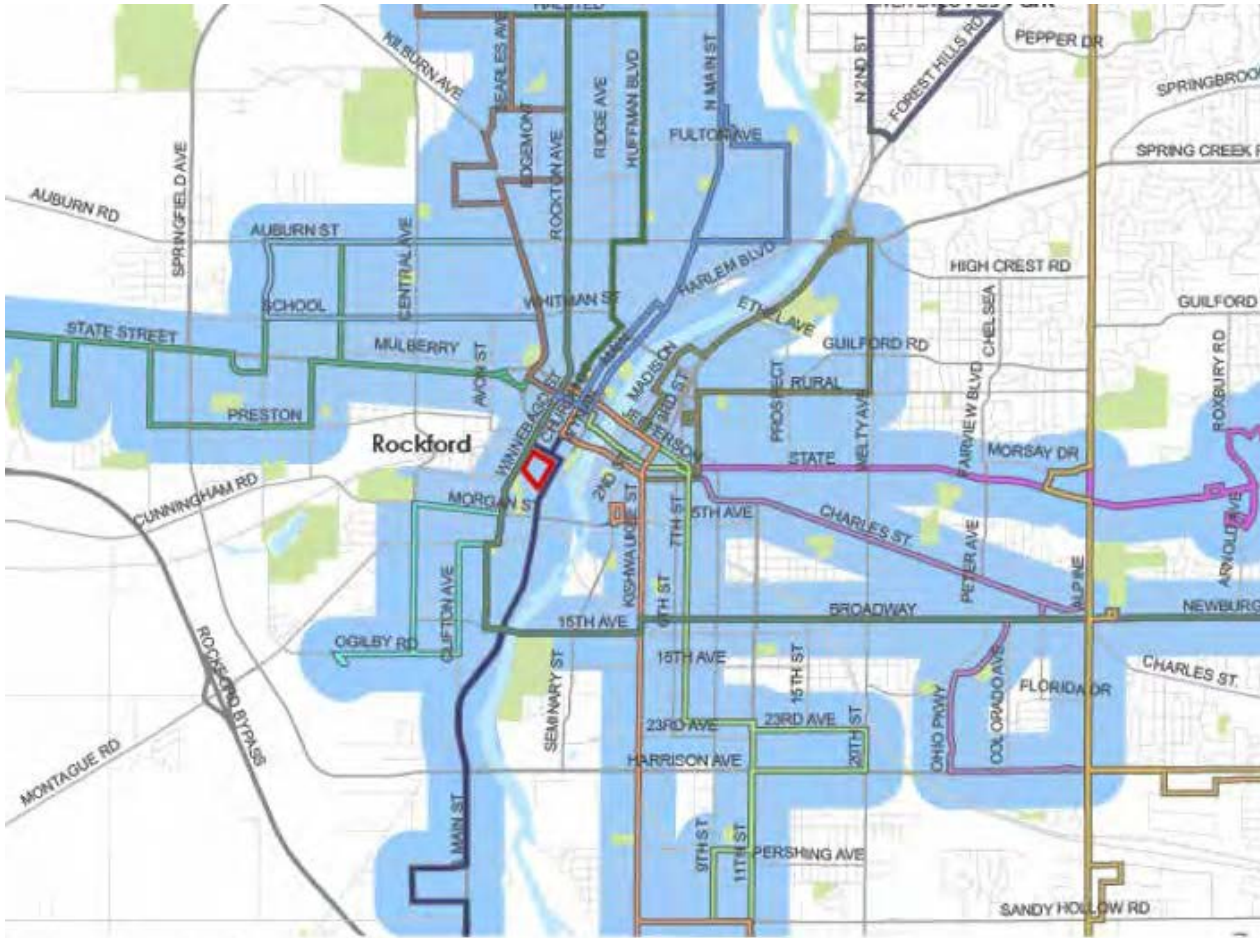
- Partial riverfront pathway with connectivity to shared-use path on Morgan Street and bike lane on Madison Street

OPPORTUNITIES

- Increase connectivity between existing bicycle resources
- Space within ROWs near station site for new bike infrastructure
- Currently no bike share program*

* While Rockford is currently served by an innovative e-mobility platform, Bird Scooters, it does not yet have a bike-share program. A bike-share program would greatly enhance the connectedness of downtown Rockford and should be prioritized as part of the rail project going forward.

iii. Transit Access



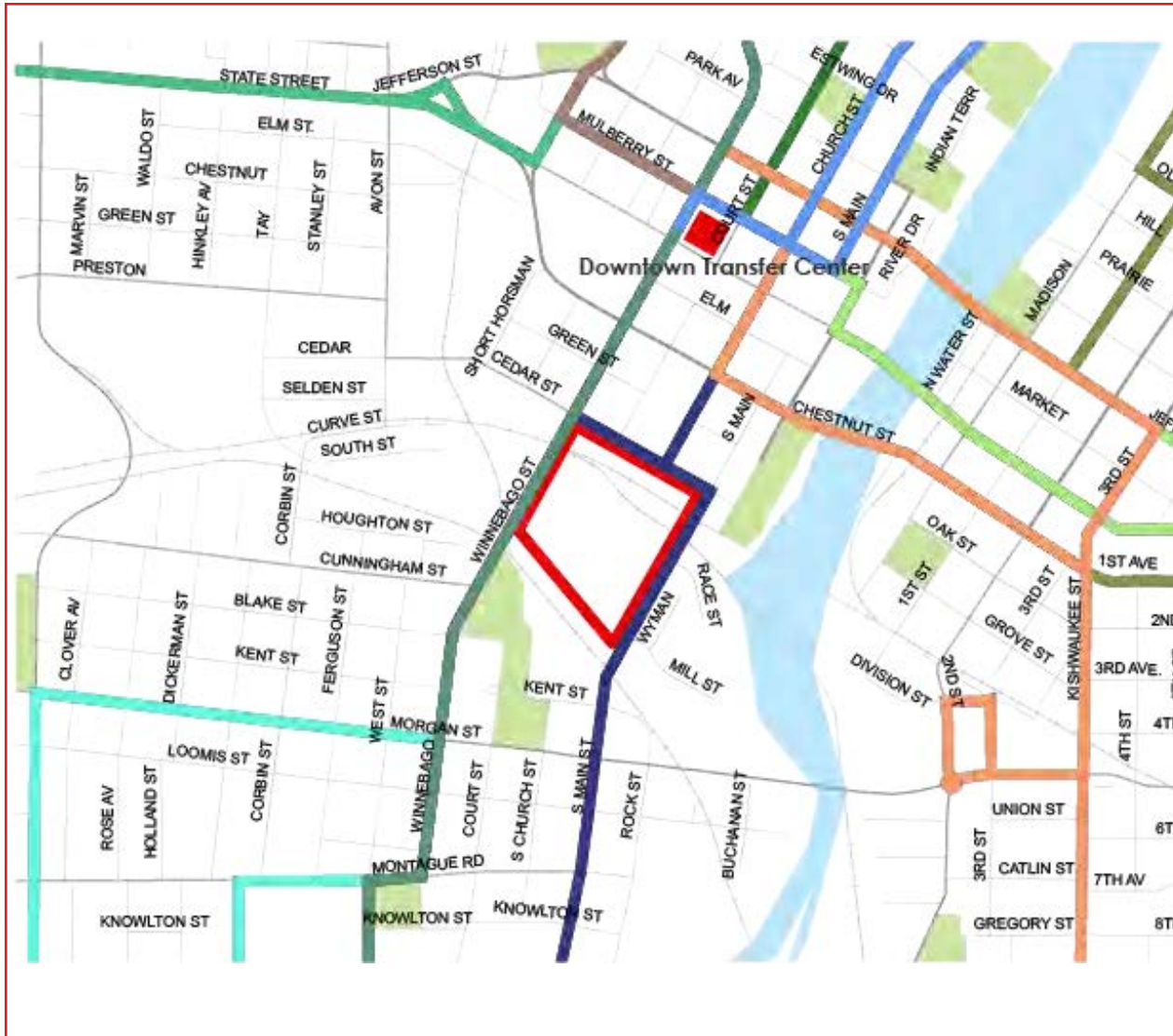
1/4 mile buffer from bus lines that go downtown

Existing bus routes provide good transit access to the station via Downtown Transfer Center

Currently the South Main route passes the station site on Cedar St; the proposed bus realignment add the Broadway route to pass the site on Cedar St.

iii. Transit Connections

10-minute walk to transfer center



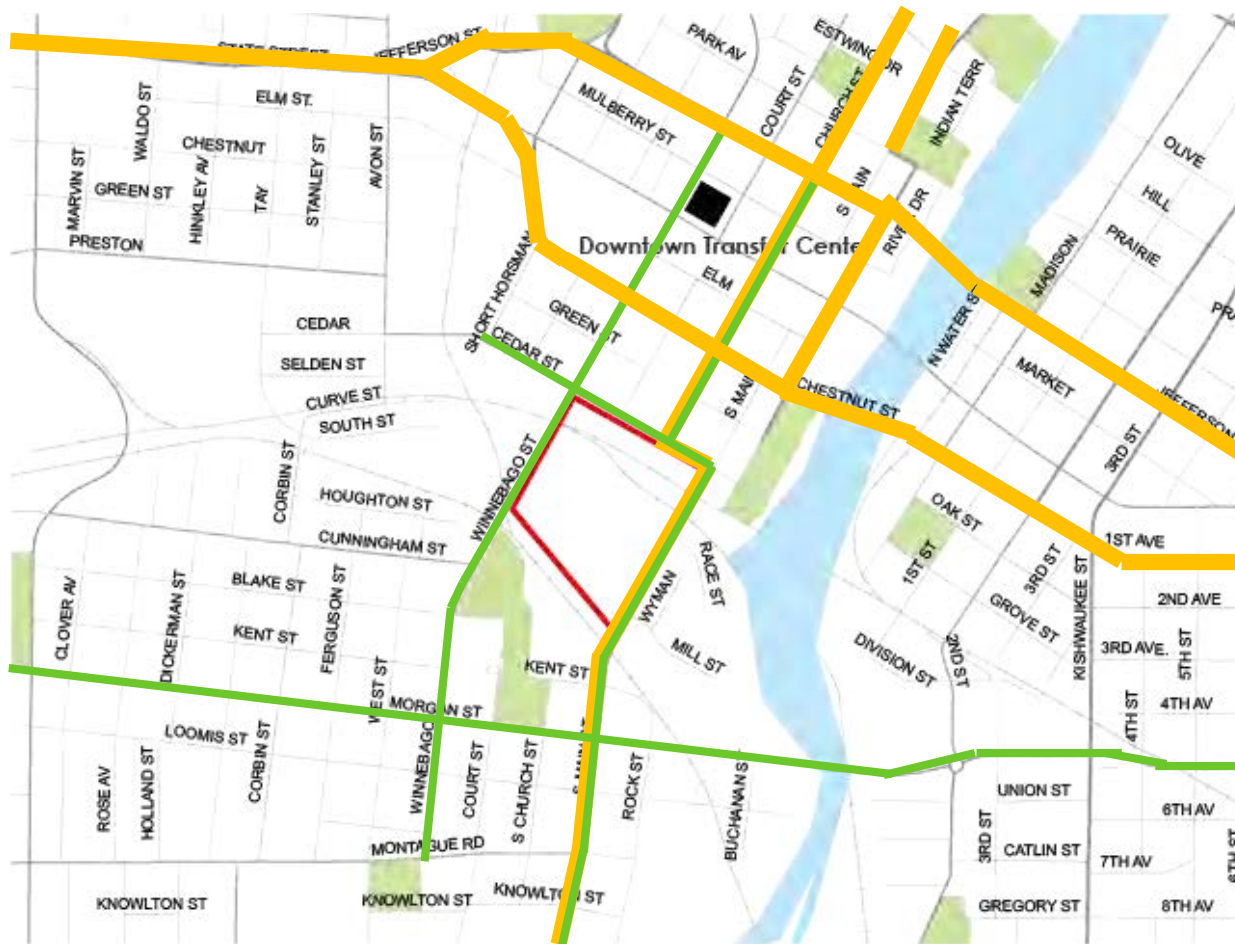
ASSETS

- Bus routes along Cedar Street
- ~0.5 mile walk to Downtown Transfer Center

OPPORTUNITIES

- Several bus routes along adjacent streets could add a stop at the station
- Space at station site should be planned for bus layovers
- Priority for placing bus stops at station entrance to increase convenience

iv. Vehicular Access



ASSETS

- Additional estimate traffic associated with the rail station will be negligible
- Station itself does not require new traffic facilities
- Streets surrounding the station site have extra capacity and/or additional space that could be reallocated

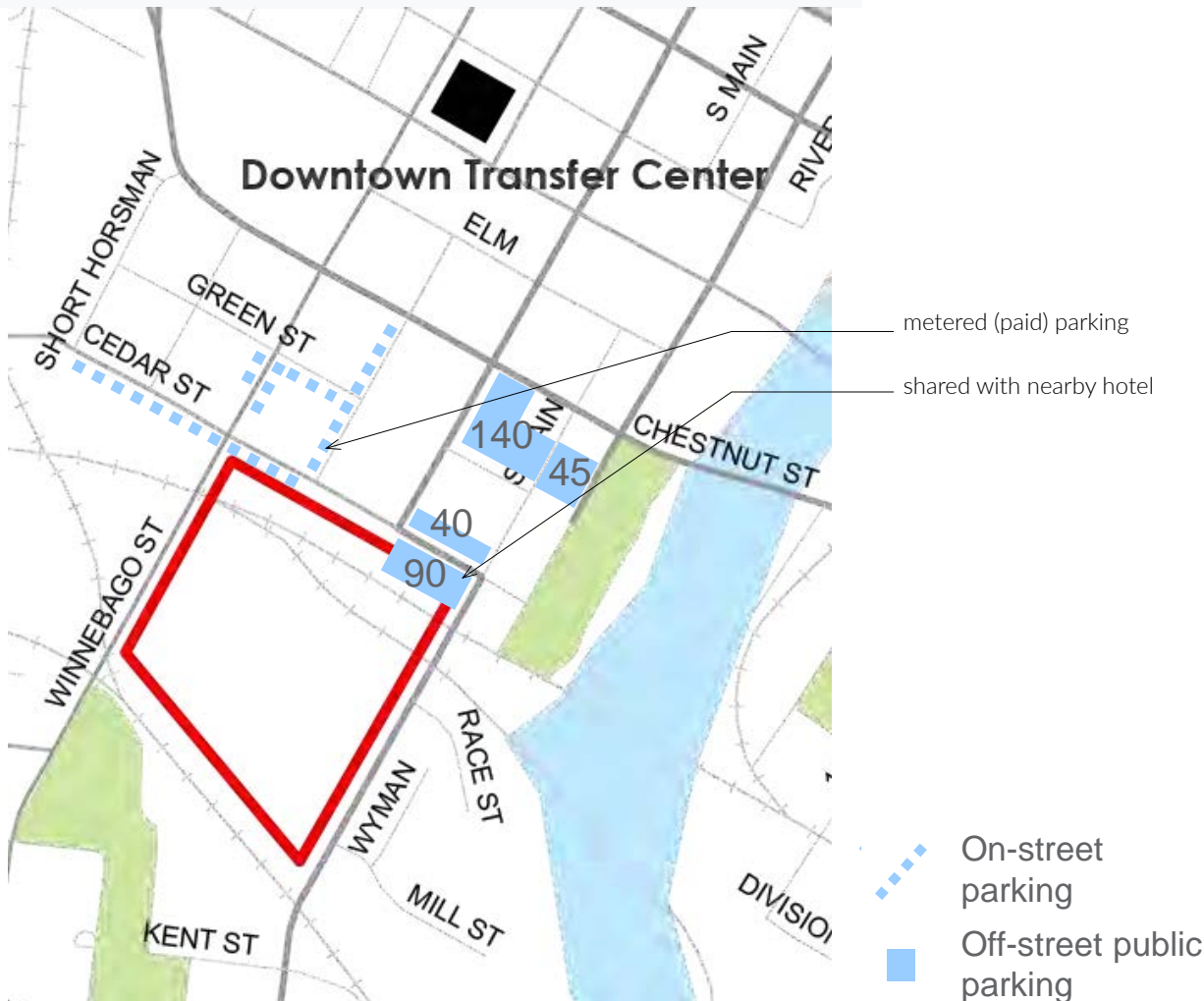
The proposed station and platform can be readily accessed via a grid of public streets. Each of these streets has extra traffic capacity and should be able to accommodate the traffic generated by the rail service for years to come. Nonetheless as a part of the entitlement process a traffic study will be required and may call for upgrades to intersections and other facilities.

— IDOT jurisdiction — Streets with multimodal enhancement opportunity



iv. Vehicular Access

39 to 77 spaces of parking are needed



ASSETS

- Two public surface lots are within a 1/4 mile of the station site
- Several other lots and garages are further north and east of the site
- Some streets have metered street parking within 1/4 mile of the site
- There are ~315 existing spots surrounding the site

OPPORTUNITIES

- Shared parking
- All 39 spaces could be on-site
- SB Friedman recommendation: Structured Parking
- Parking Need: ~77 spaces

ASSUMPTIONS

- 90% daily trips (M-F round-trip rides); target mode split of 75% of riders driving to the station = 30 daily vehicles + 15% extra spaces for circulation = 35 spaces needed M-F
- 10% overnight trips (concentrated on weekends); target mode split of 75% of riders driving to the station = 4 overnight vehicles on weekends
- +10% for overlap of daily/overnight parkers = ~39 spaces

The parking recommendations from consultants are contradictory. The addition of a parking structure would allow for 77 new parking spaces, the higher amount of spaces recommended. Providing only 39 new parking spaces, the lower amount of spaces recommended, could be accomplished on site. The number of new parking spaces should fall between 39 and 77. Steering committee input can guide how many spaces will ultimately be recommended.

v. Safety Near the Station Site



Vehicles speed around station site are high, aligning with comments from stakeholder engagement. Speeds are lower north of the station site suggesting street characteristics there could be extended near the site to encourage lower speeds.



This map indicates that most intersections in downtown Rockford have experienced multiple vehicle crashes. The map does not show pedestrian crashes in the vicinity of the proposed station and platform, likely reflecting the fact that there are few-to-no walkers in this part of downtown. The start of passenger rail will introduce more pedestrians to this district. Traffic calming measures should be introduced on Cedar as illustrated on page 39.

4. DETAILED STATION AREA PLANNING

a. Station Study: Station Location

New Construction on Vacant Corner Lot



The vacant lot on the southeast corner of Cedar and Court is a desirable location for a newly-built rail station. It would support vehicular drop off on Cedar and provide access to the platform a short walk away.

For this location to work, a developer would build a new building to design specifications and provide it to the rail operator as a rental, condominium or subdivide the site to provide a fee-simple ownership structure.

 Proposed Station

Ground Floor of Redeveloped Building



The ground floor of the exiting two-story masonry building on the south side of Cedar is a desirable location for the rail station. It would support vehicular drop off on Cedar and provide access to the platform a short walk away.

For this location to work, a developer would need to undertake the redevelopment of the entire building and make the rail station either a tenant or a condominium. Developers have expressed interest in this project, due in part to the availability of Illinois River-edge historic tax credits.

New Construction on Vacant Corner



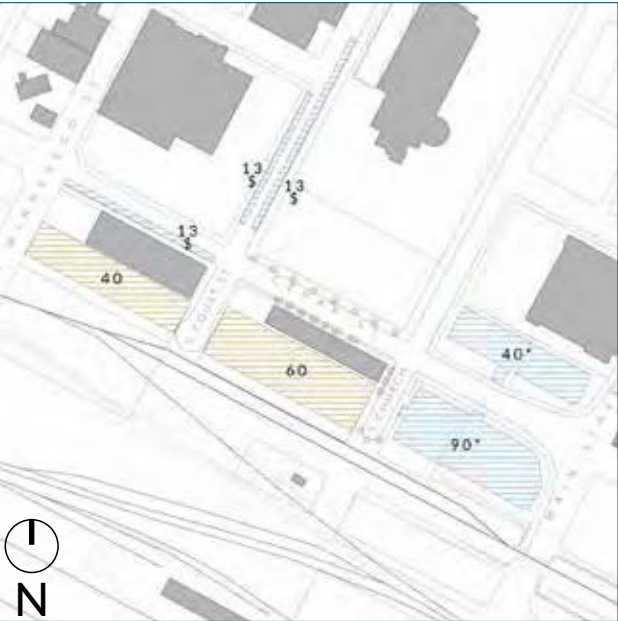
The parking lot on the southeast corner of Cedar and Church is a viable location for a newly-built rail station. It would support vehicular drop off on Cedar and provide direct access to the platform.

The viability of this location depends on whether the landowner would be willing to part with some or all of the site.

Not Recommended

b. Station Study: Rail Parking

Utilize Existing On-Street and Shared Parking



This scenario relies on existing, underutilized paid on-street and free shared parking. This strategy maximizes future Transit Oriented Development potential by not building surface lots on prime development sites.

**Parking lots southeast of the station have active agreements with the nearby hotel and require further review with relevant parties before parking count can be determined*

<div></div> Rail Parking	0
<div></div> Public On-Street (paid)	39
<div></div> Public Off-Street*	130*
<div></div> Commercial Parking	100
Total	269*

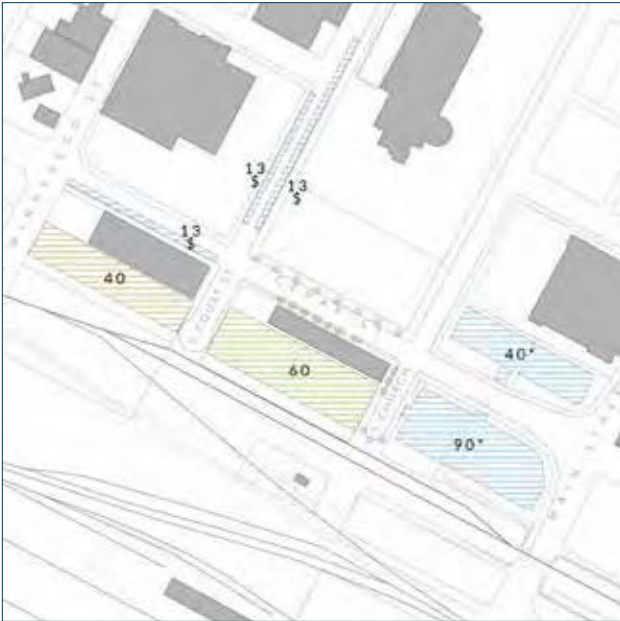
New Parking Lot North of Cedar



Many sites in this area have environmentally contaminated soils. The land parcel north of Cedar proposed for a future surface parking lot may well be contaminated. Impervious parking lot is an EPA-approved method of containing soil contamination by capping it, and is achievable at less cost than hauling contaminated soils away.

40
39
130*
100
309*

New Parking Lot Adjacent to the Platform

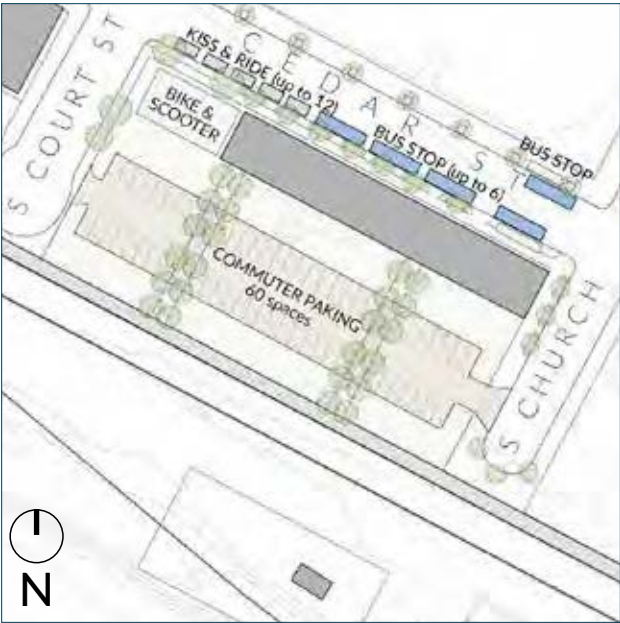


This scenario proposes a new surface parking lot adjacent to the rail platform between Court and Church. This parking would all be within a 1-minute walk of the rail platform. However this would make the redevelopment of the historic two-story building on the same block more difficult by depriving it of meeting its off-street parking needs.

60
60
130*
40
290*

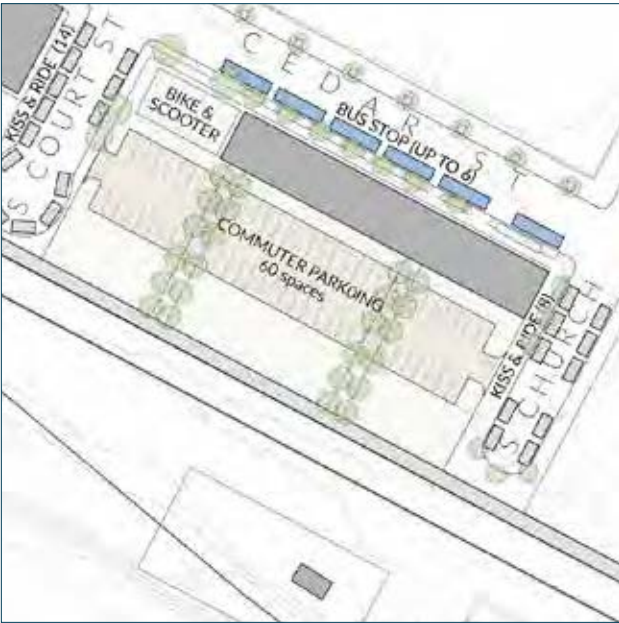
c. Station Study: Access and Drop-Off

Cedar Street Drop Off




This scenario proposes to utilize both sides of Cedar Street to support buses and kiss’n’ride staging. Facilities for bikes and scooters would be provided on the southwest corner of Cedar and Court. This plan is both cost effective and efficient, minimizing capital expenses and providing moderate travel distances for all modes.

Drop-Off on Cedar, Court, and Church

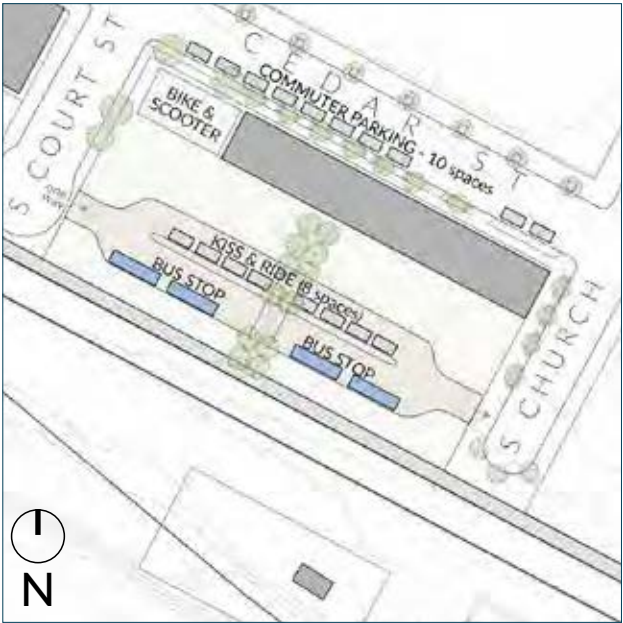


This scenario proposes to use the south side of Cedar Street for bus staging and to accommodate kiss’n’rides in cul-de-sacs on Church and Court. Facilities for bikes and scooters would be provided on the southwest corner of Cedar and Court. This plan is reasonably cost effective and provides short travel distances for all modes.

	Dedicated Rail Parking	60	60
	Bus	6	6
	Kiss & Ride	12	20

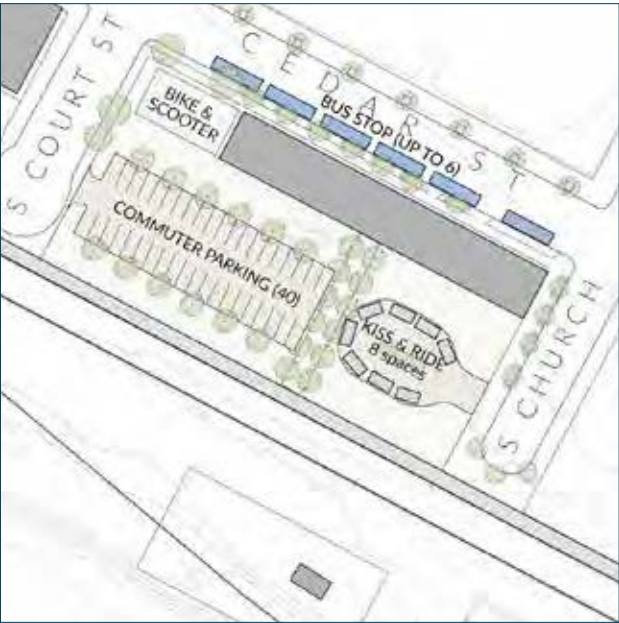
c. Station Study: Access and Drop-Off

Trackside Drop-Off





This scenario proposes to use the private land south of the proposed station building for both bus staging and kiss’n’ride drop-offs. Facilities for bikes and scooters would be provided on the southwest corner of Cedar and Court. This plan is less cost effective but provides the shortest possible travel distance for all modes. However by allocating this prime land to dropoff it makes the redevelopment of the existing brick building that much more difficult.

Hybrid



This scenario proposes to use the south side of Cedar Street for bus staging and a track-edge cul-de-sac, accessed from Church street, for kiss’n’ride dropoff. This plan is a compromise to allow the 2-story brick building to have some off-street parking Facilities for bikes and scooters would be provided on the southwest corner of Cedar and Court.

	Dedicated Rail Parking	10	40
	Bus	4	6
	Kiss & Ride	8	8

5. HOW TO OPTIMIZE ECONOMIC DEVELOPMENT? (MARKET DEMAND & STRATEGIES)

a. Freeing Up Land for Development

Alignment with UP Belvidere



Option A - UP Belvidere Line

- Confirmed railway to be used for this study
- Trains from the east terminate just west of downtown
- Fewer Freight trains (2)

New Interchange?

A railway feasibility study is being conducted concurrently with this station location study. Preliminary findings from the railway feasibility study suggest that a new UP/CN interchange will be recommended west of Downtown.

For additional information on exploration of using the CN Freeport line, please see the Appendix.

b. Accessing Underdeveloped Land: Conditions

General Conditions

IL2 is an arterial street designed for higher speed travel that happens to have a posted speed of 30MPH. Many/most drivers ignore the posted speed limit and drive to what feels comfortable (40-50MPH). This is double the optimal vehicular speed of 20-25MPH for a pedestrian street.

Main Street can accommodate pedestrian and bikes but is far from an ideal complete street. The sidewalks start at the curb and lacks landscape buffer, a worst-case-scenario for pedestrians on a higher-speed street. Fortunately, there are connections to bike trails and networks.

Winnebago provides a walking route over the Kent Creek valley, connecting downtown to points of interest to the south. Unfortunately, the height of the Winnebago street bridge (30' to 40' above the valley below) makes it impractical to connect to.

Underpass Options

It would be ideal if South Church Street were extended south underneath the platform. Such an extension would accomplish two important planning goals:

1. Provide a direct link to new development sites south of downtown, and
2. Provide an alternate route paralleling Main Street.

Unfortunately, the distance between Cedar Street and the proposed platform edge is too short to accommodate the deep slope of a street underpass.

What can fit in the space available is a pedestrian/bike underpass that can switchback as needed to achieve sufficient underpass headroom.

A non-vehicular underpass aligned with Church Street can provide strategic north-south pedestrian and bike access to future

development to the south. In order to enable long term development potential, a ped/bike underpass should be incorporated into the scope of the platform construction project.

The exact design and dimensions of this facility are outside the scope of this project, but the importance of making this connection is vitally important. Once the platform is built and the trains are running it will be too late to build this facility. See page 29 for drawings showing proposed underpass at Church Street in section.

b. Accessing Underdeveloped Land: S Court St

S Court Street Pedestrian Underpass

Providing a pedestrian underpass at Court Street, while technically feasible leads to a tunnel over 100 feet in length. The tunnel could be broken into two segments to allow for more daylight but still comes at higher cost than alternative options. There are also significant hurdles that come to building an underpass under an active railroad.

S Court Street Vehicular Underpass

A vehicular underpass is not viable at this location. Due to the short distance between Cedar Street and the tracks, there is not enough room to get the necessary clearance for vehicles and trucks to pass underneath at Court Street.

Due to the density of railroad tracks and switches immediately south of the platform, a vehicular underpass at Court Street is simply not viable.



- • • • vehicular
- pedestrian (switchback)
- potential development
- proposed station location

second underpass is too expensive to erect for a temporary use, given that this switchback will be removed in Phase II

switchbacks allow for necessary ramp length to pass under tracks

Court Street Pedestrian Underpass **Not Recommended**

second underpass is too expensive to erect for a temporary use, given that this switchback will be removed in Phase II

block length only allows for ~6' of elevation change, not enough for vehicular underpass

Court Street Vehicular Underpass **Not Viable**

0' 10' 30' 50'

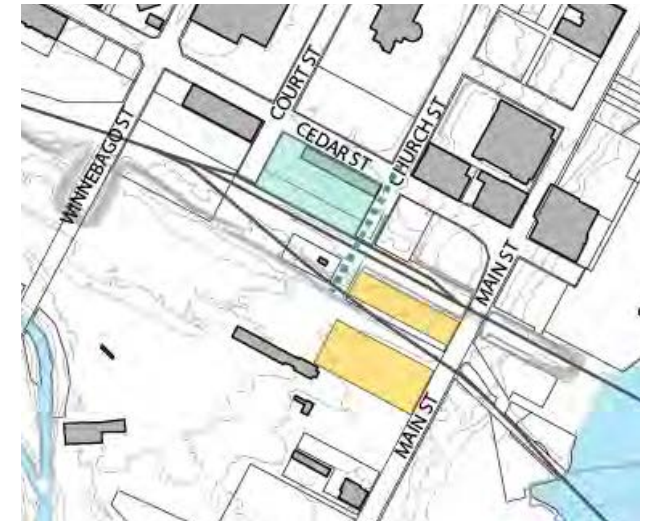
b. Accessing Underdeveloped Land: S Church St

S Church Street Pedestrian Underpass

Providing a pedestrian underpass at Church Street is possible and provides enough head clearance while maintaining ramp run and length required by accessibility codes. This option connects best to the future development areas south of the proposed station. This is also the best location to cross under the tracks with the shortest possible tunnel length.

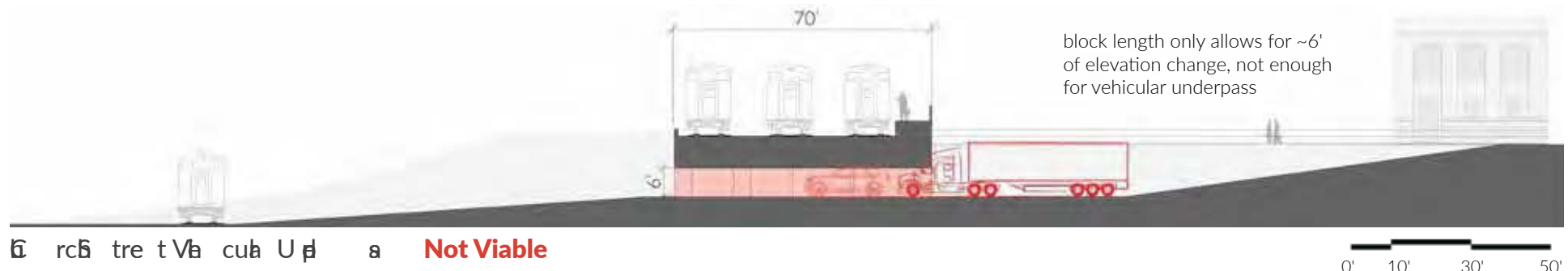
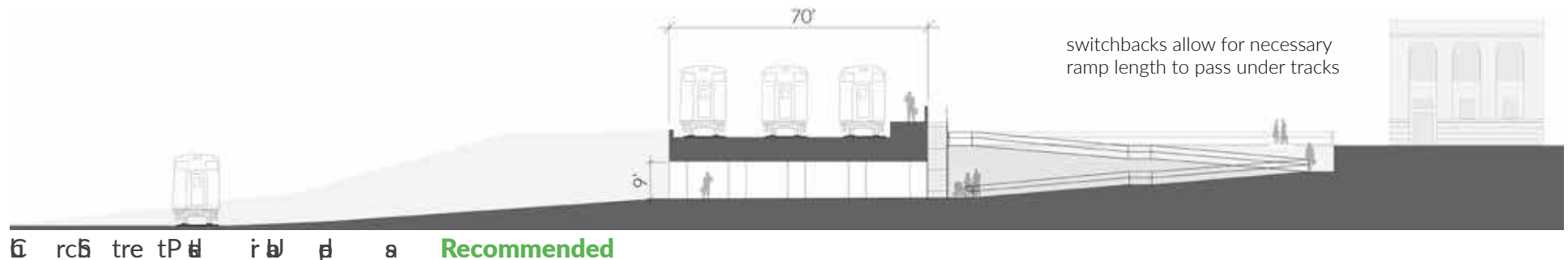
S Church Street Vehicular Underpass

A vehicular underpass is not viable at this location. Due to the short distance between Cedar Street and the tracks, there is not enough room to get the necessary clearance for vehicles and trucks to pass underneath at Church Street.



- ● ● vehicular
- pedestrian (switchback)
- potential development
- proposed station location

switchbacks allow for necessary ramp length to pass under tracks

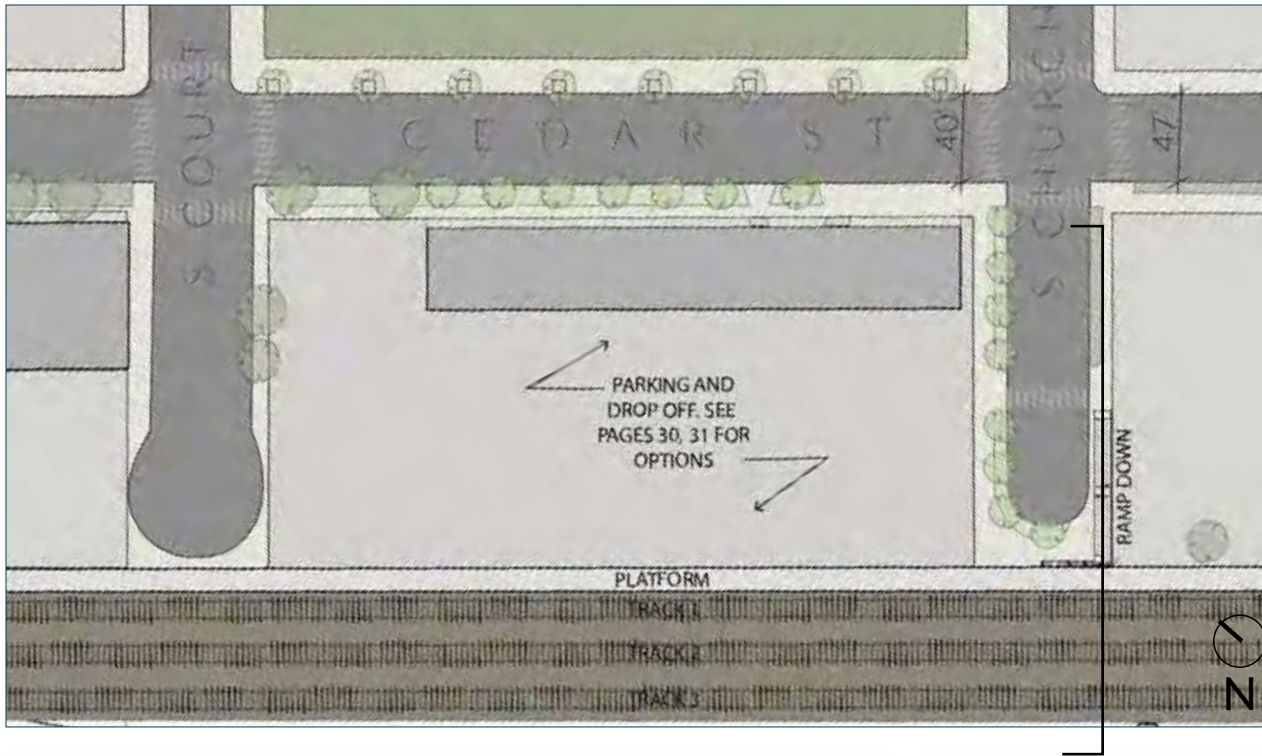


block length only allows for ~6' of elevation change, not enough for vehicular underpass

0' 10' 30' 50'

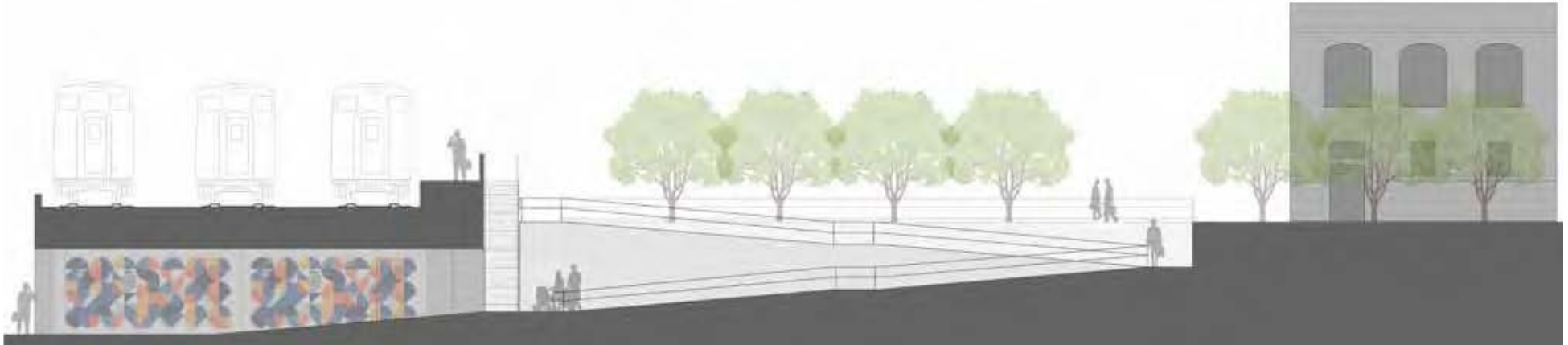
c. Streetscape Study: Arrival Experience

Elevated Experience at New Station



The current Cedar Street streetscape has ample width for street improvements without adjusting curb locations or street width. Existing street trees could be protected and maintained in place.

This scenario proposes adding street trees into the existing infrastructure at the north side of Cedar Street and upgrading the sidewalk on the south side of Cedar Street to include a platform for bus on- and off-boarding with sheltered bus stops for waiting passengers, separated from the main sidewalk by raised planters with trees. Street trees could also be added to Church Street south of Cedar.



d. TOD Development: Parcel Ownership



The large site south of the proposed platform is owned by multiple entities. Over time it is hoped that the railroad uses of this land will diminish and the land will become available for development.

There are two Main Street parcels that may be available for development in the near term, identified in the key as A and B.

The large acreage of undeveloped land to the south of the proposed station holds immense long term potential for Transit Oriented Development. In the mid-term (10+ years) the railroads will still requires use of the switchback tracks that encumber much of the site. If and when the railroad does not need those tracks a master developer can realize the site's full development potential, likely in phases as illustrated on the next page.

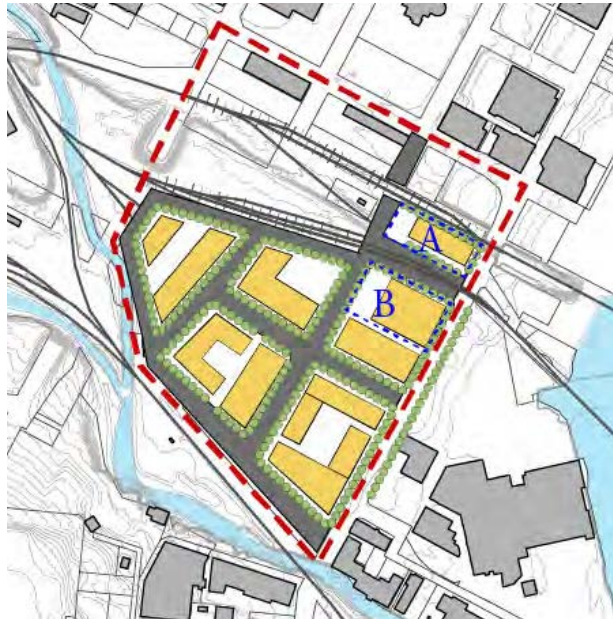
d. TOD Development: Long-Term Opportunities

City Owned Parcels Available for Immediate Development

There are two city-owned parcels on Main Street that can be developed consistent with the long-term master plans, starting now. (See site plan drawing, Parcels A and B.) The northern site (1) would be developed in concert with a proposed ped/bike underpass under the platform and tracks. The site can accommodate a 3-5 story building with parking and would have a single point of vehicular access off Main Street. The southern site (2) would be developed to include an east-west thoroughfare on the northern lot line. A 3-5 story building could be accommodated to the south. It may be possible to negotiate with the railroad to lease the land to accommodate off-street parking.

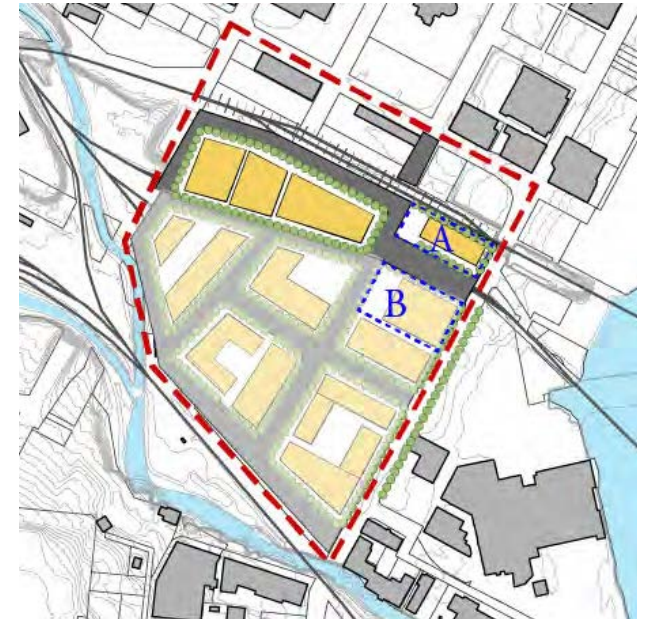
Rockford's Comprehensive Land Use plan and zoning regulations do not currently envision this development. Should there prove to be developer interest in these ideas, the regulations can be updated to enable them to occur.

Near Term: Rail Switchback Remains



Construction could be phased to first develop the largest parcel of land south of Rockford's downtown station, connected to the platform via a pedestrian tunnel at Church street, utilizing the existing grade connection at the southern tracks at Main Street. The pedestrian tunnel provides safe and fast access to the platform, and increases accessibility and foot traffic to the new development parcels.

Long Term: Rail Switchback Removed



In Phase II of the development, if the connecting tracks not currently in use are removed, a new development parcel is opened up and could be connected via two crossings to connect and extend the street grid created in Phase I.

e. Transit-Oriented Development Market Study

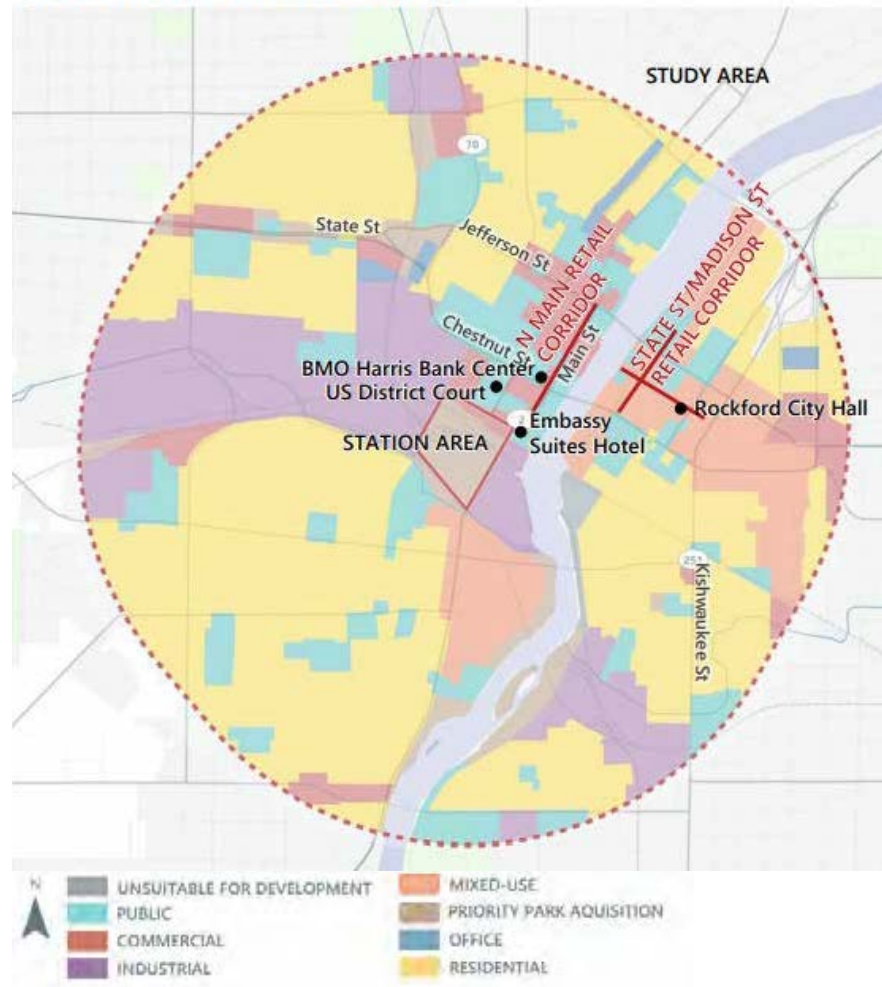
Site Context: The proposed Rockford station is located just beyond the southern edge of downtown on South Main Street, approximately one block from the west bank of the Rock River at the location of an underutilized rail yard. Removal of the rail yard and integration of the site within the downtown street grid presents an opportunity to re-think land uses that were previously industrial and transition to transit-supportive land uses such as residential, commercial, and open space/recreation.

Study Area Context: The Study Area extends outwards from the proposed station location in a one-mile buffer bounded by Whitman Street to the north, Longwood Street to the east, 15th Avenue to the south, and Webster Ave to the west.

Within the Study Area, the station has the potential to connect visitors to key downtown destinations including:

- E. State Street/Madison retail corridor
- N. Main retail corridor
- BMO Harris Center
- Embassy Suites Hotel
- City Hall

STUDY AREA EXISTING LAND USE



The proposed Rockford station is the anchor driving TOD potential between job and retail centers. The station will be one more asset in an area already rich in mixed-use assets including major employers, walkable retail centers, and entertainment destinations.

f. Market Demand

Multifamily has potential, retail and office are a more limited draw

Increasing Residential



RESIDENTIAL

There is growing multifamily potential in the Study Area into the future. New residential development continues after prolonged stagnation and several higher-profile projects are bringing energy to the market.

Development of various housing product types could accelerate redevelopment of the area by tapping into multiple market cohorts concurrently (e.g., townhomes or small-lot single family could be built concurrently with multifamily as they have different target markets.)

Limited Retail



RETAIL

New retail development is limited when looking at recent performance and local trends. However, the Study Area does comprise some of the most active retail in Rockford and the only truly walkable urban retail in the area. While new development may be limited, the attractiveness of nearby retail corridors is likely to remain and there is potential to continue to fill vacant spaces.

Low-Traction for Office



OFFICE

Local and national trends in office development indicate limited potential for new office development within the Study Area. Employment trends and post-COVID office trends do not suggest there will be much traction for traditional office development.

f. Market Demand: Increasing Residential Potential

Varying Densities & Formats



Varying Densities and Formats

Varying densities and formats can help achieve a true walkable, mixed-use, urban environment that is attractive for residents, employers, and businesses. Higher density closest to train station makes development more attractive and financially feasible while lower density products further out can help establish the larger neighborhood. Higher density housing has the potential to provide housing products that are lower-cost and lower-maintenance than single-family homes. These types of housing may be attractive and affordable to lower-income households, young professionals, or empty-nesters. Development of various housing product types could accelerate redevelopment of the area by tapping into multiple market cohorts currently (e.g., townhomes or small-lot single family could be built concurrently with multifamily as they have different target markets.)

SB Friedman Development Advisors

Mix of Land Uses



Mix of Land Uses

Typically, mixed-use buildings include approximately small-scale retail space with tenant-serving amenities such as coffee shops, restaurants, or other small-footprint retail. For mixed-use buildings to be successful, each component, including retail, needs to be viable on its own. Some recent and proposed multifamily projects are incorporating limited first-floor retail or restaurant spaces with footprints between 5,000 and 13,000 SF.

Structured Parking



Structured Parking

Structured parking makes a building more attractive by creating more useable building space, increasing its density, and contributing to a more walkable environment. Structured parking accomplishes this by providing greater parking capacity on a smaller footprint. Market rents will determine whether structured parking is feasible to construct, but public subsidies may help defray costs to make construction viable. Alternatively, area-wide parking strategies, such as a shared-use garage(s), could improve the economics of individual projects.

12

f. Market Demand: Increasing Residential Potential

Mixed Income



Mixed-income

Mixed-income housing adjacent to the train station should be considered to support both equity and project feasibility. Currently, a significant number of downtown households are low-income. Providing legally restricted housing that is affordable to low-income households early in the redevelopment of the area may help limit displacement. Additionally, mixed-income housing that leverages low-income housing tax credits (LIHTC) and other available incentives may help defray costs of market-rate development and further prove the market by demonstrating latent demand.

Enhanced Building Amenities



Enhanced Building Amenities

With remote working becoming more permanent, more residents may be looking for in-home solutions for working from home ("WFH"), fitness, and social gathering.

New multifamily projects are becoming more highly amenitized with features such as fitness centers, movie theaters, and rooftop common areas. Shared workspaces and outdoor workstations may also emerge as an alternative workspace for people desiring another WFH option.

Placemaking



Placemaking

Placemaking efforts help make the Study Area a more attractive destination for residents, visitors and employers. Placemaking entails improvements to the physical environment and public amenities that make an area more active and attractive. Examples include:

- Enhanced public realm features including streetscaping, public art and gateways
- Development of compelling and highly-programmed public spaces
- Preservation of unique and historic properties

Placemaking around the station may help further catalyze development and increase the viability of infill development between the station and riverfront.

f. Market Demand: Multifamily Key Takeaways

Momentum for transit-supportive housing appears to be growing

Increasing Potential



INCREASING POTENTIAL

After fairly limited development through the 2010's, multifamily development has increased momentum and downtown is capturing a high percentage of proposed new development. There is increasing market potential for transit-supportive multifamily development, including both rehabilitation of existing buildings and new construction. Near-term potential for new construction is likely to be strongest near the riverfront. Therefore, new construction could be prioritized at the riverfront while prioritizing adaptive reuse closer to station site, allowing for infill development to occur as market conditions allow.

Emerging TOD Typologies



EMERGING TOD TYPOLOGIES DOWNTOWN

New multifamily development within the Study Area should achieve densities supportive to TOD with densities highest at station, then tapering down to existing neighborhoods. Higher density buildings should include structured parking, or shared parking agreements, to reduce the number of surface lots and enhance walkability.

Public Assistance

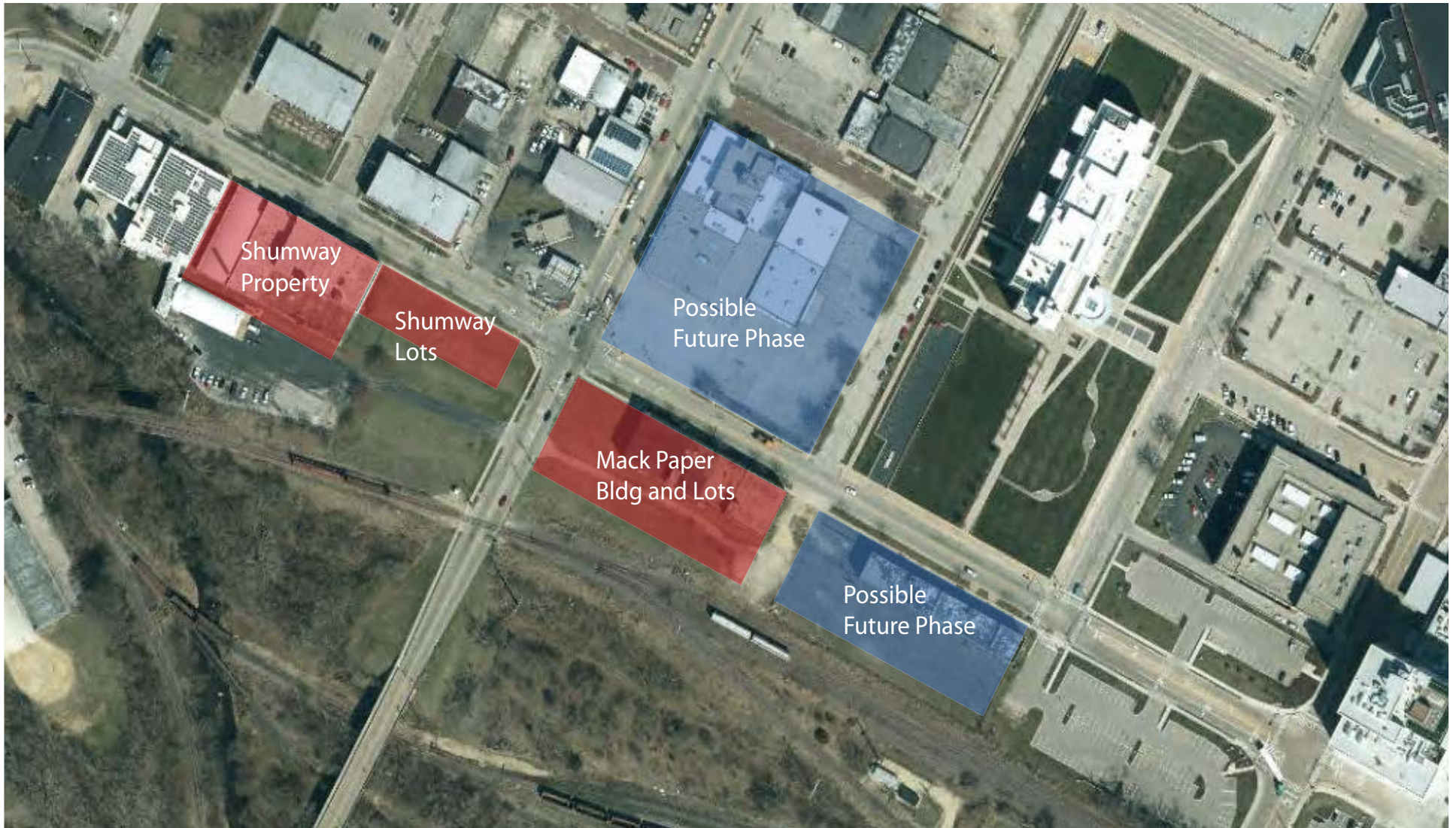


PUBLIC ASSISTANCE

Public financial assistance may be required in the near-term until market-rate rents are high enough to support construction costs. A variety of public sector sources may be available to provide funding for multifamily developments in the Study Area. Recent development has taken advantage of Historic Tax Credits, TIF, and grants from the State of Illinois. LIHTC may also be used help defray costs of new construction of market-rate mixed-income units in the near-term.

g. Pipeline Projects: Maps

Gorman & Company - Development adjacent to study area



g. Pipeline Projects: Renderings

Gorman & Company - Development adjacent to study area



g. Pipeline Projects: Prior Station Plans

Developer-Driven Station Proposals – Legat, 2014

For most of the last decade the Rockford development community has seen real estate value in the siting and planning of this station. Specifically, the Embassy Suites developed by Gorman has sought to establish a physical connection to the proposed station, engaging Legat Architects to prepare studies. A 2014 study proposed an ambitious and sculptural mixed-use development featuring a dual-use multistory parking structure. This larger facility made sense from the point of view of integrating the hotel and the train station into a functional whole. However the scale of the proposed investment far overshot what made sense given the ample supply of nearby parking and the relatively modest ridership numbers.



Distributed Amenities and Public Infrastructure

The benefit of a transit-oriented master plan is that these enhanced amenities need not be provided solely by the station facility itself. However many of the core amenities are public infrastructure such as parking and taxi/rideshare access.

- Rockford New Multimodal Station Design “Park Option”, from Legat in 2014
- Exceeds Caretaker Station guidelines

h. Market Conclusions

Historic renovation will occur first due to generous historic tax credits available in Rockford

New construction will start when rents/sales prices justify the much higher unsubsidized cost

New development will not be able to pay for the cost of infrastructure

TIF or other forms of revenue capture may be necessary to make development viable

6. SITE PLAN REVIEW

a. Site Plan Review

River Floodplain

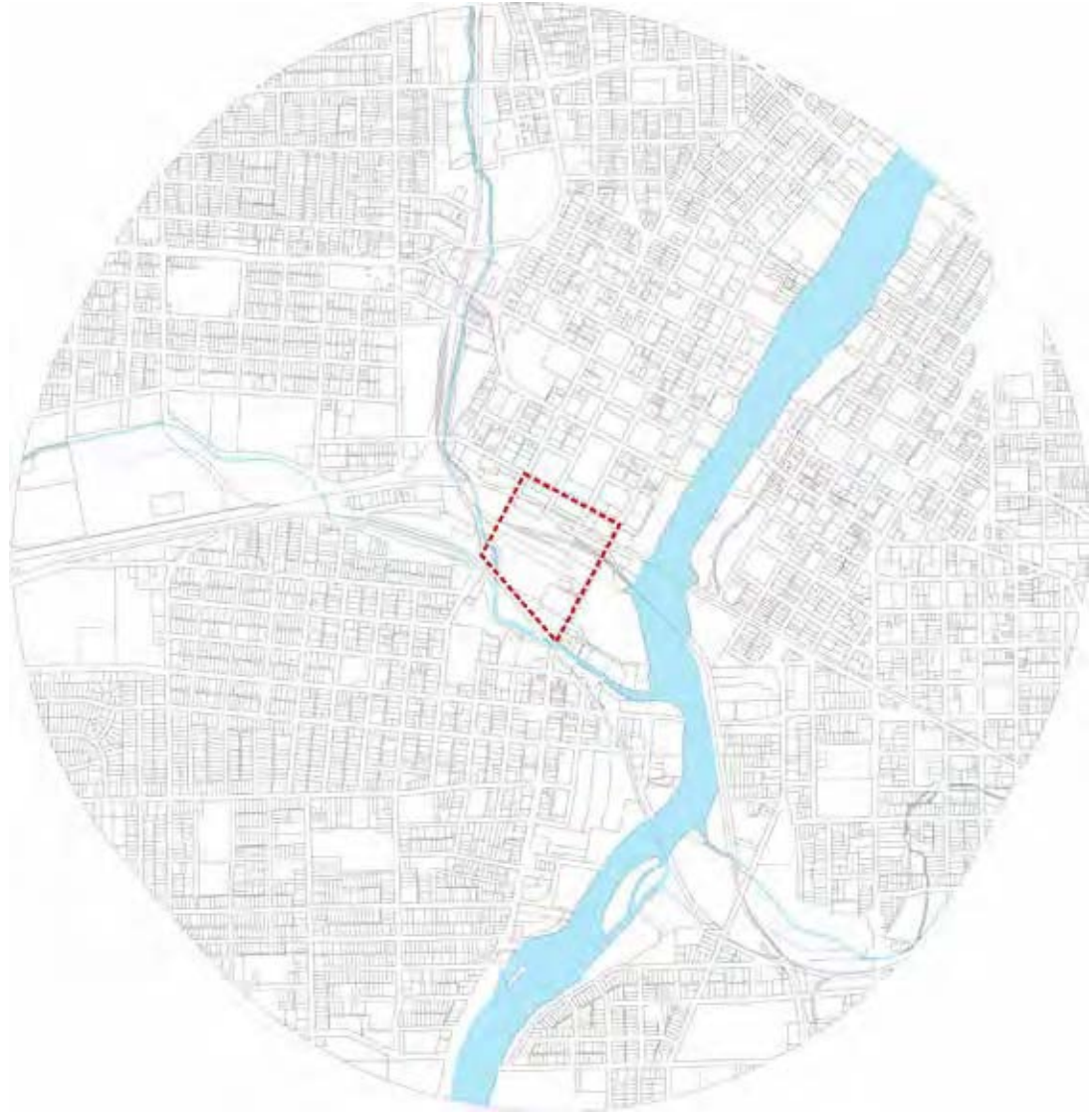
We believe there are floodplain constraints on the southern end of the study area; however, without the flood plain data, we aren't sure yet. This will need to be assessed in the next draft of this document.

Multimodal Connections

Walking to the transer station is about a 10-minute walk from the northern boundary of the study area. This is approximately the distance people are willing to travel on foot.

Parking Lots

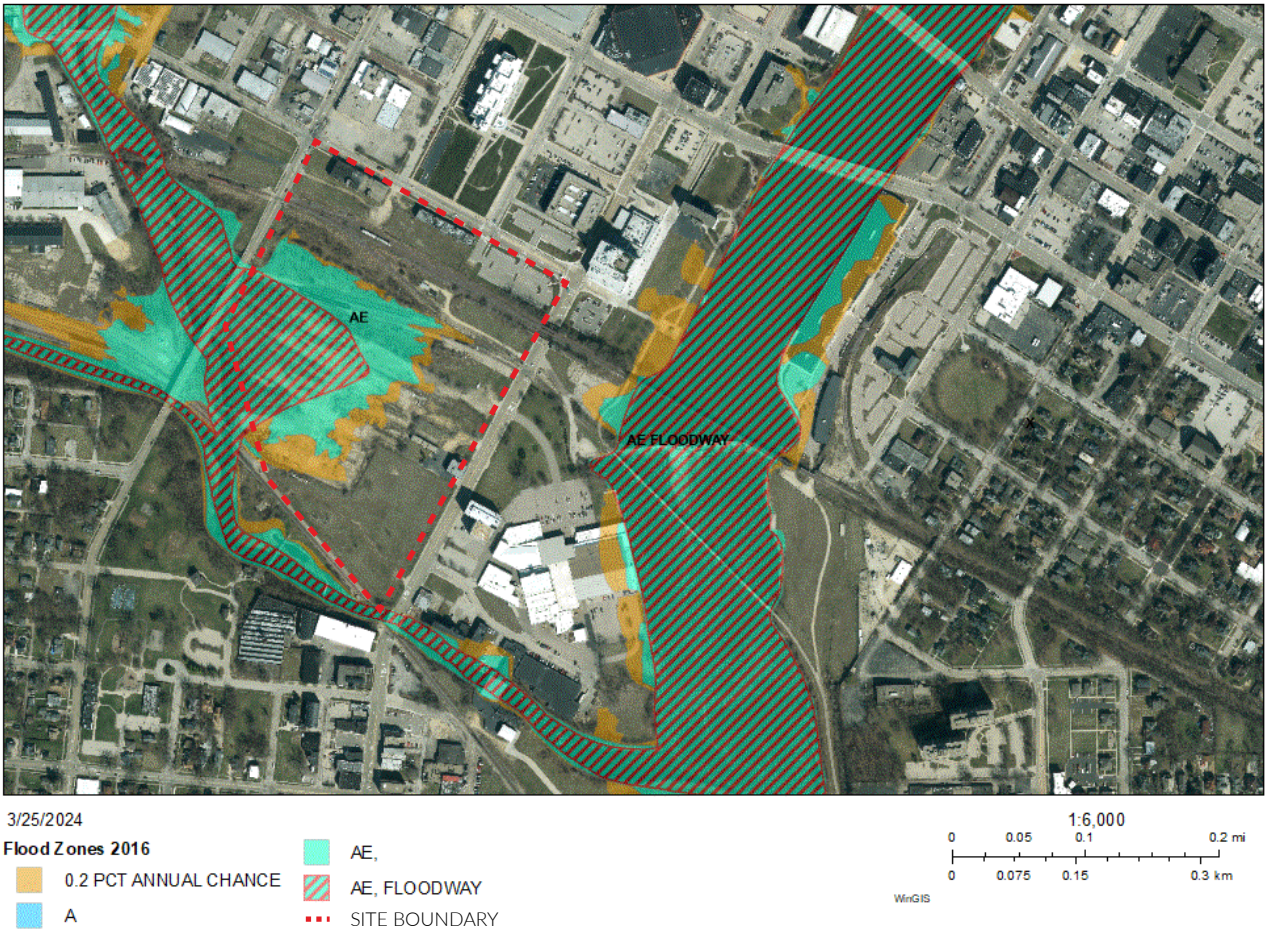
Based on ridership data, we need 39 to 77 parking spots for riders. Making room for these spots is a priority.



a. Site Plan Review

River Floodplain

We believe there are floodplain constraints on the southern end of the study area; however, without the flood plain data, we aren't sure yet. This will need to be assessed in the next draft of this document.



b. Key Takeaways and Decisions

Freeing Up Land for Development

In order to succeed as an economic development catalyst, Rockford needs a new rail yard in the study location. We recommend that this finding be shared with the team working on the parallel rail study.

Station Location and Planning

This is among the most strategic decisions the steering committee can provide guidance on. There are multiple options to discuss related to station location along Cedar Street, pedestrian access and traffic flow, connection to bus transit lines, as well as commuter and public parking allocation. The goal is a continuous, walkable urban fabric: The first option is to utilize the ground floor of existing Chicago North Western Freight Depot historic railroad building at 514 S Church. Alternatively another viable option would be to vacate Church Street and build new construction east of the historic depot building.

Connecting to Downtown Rockford

It is necessary that there is multimodal connectivity between the station and downtown. New streets can easily be connected to the western site boundary of Main Street, although this will not improve bike and pedestrian connectivity. Finding a way to connect the site — to the north through Church or Court, to the south by extending bike and pedestrian routes, and possibly to the west by building to connect to Winnebago — will be instrumental in ensuring the station's success as a gateway to downtown Rockford and an impetus for development.

6. APPENDIX

a. Ridership Assumptions: 2007 Amtrak Study

Table 3

Chicago – Bensenville – Belvidere – Rockford
Freeport – Galena – Dubuque
Amtrak -- Metra -- UP -- CN

Westbound					Eastbound				
Daily					Daily				
6:15 PM									10:25 AM
R 6:55 PM	Dp	Chicago, IL-Union Sta.	CT	Ar		D	9:55 AM		
8:17 PM	Dp	Bensenville, IL		Dp			8:19 AM		
8:42 PM	Dp	Belvidere, IL		Dp			7:46 AM		
8:52 PM	Dp	Alpine Road		Dp			7:36 AM		
9:31 PM	Dp	Rockford, IL		Dp			6:57 AM		
10:50 PM	Dp	Freeport, IL		Dp			5:38 AM		
11:40 PM	Dp	Galena, IL		Dp			5:00 AM		
	Ar	Dubuque, IA	CT	Dp					

R at Bensenville Westbound - Stops only to receive passengers.
D at Bensenville Eastbound - Stops only to discharge passengers.

Table 4

Forecast Results for Proposed Rockford and Dubuque Service Options (Annual Totals)

	<u>Route A</u> Metra-UP-CN Belvidere		<u>Route B</u> Metra-ICE-IRL-CN Airport		<u>Route C</u> CN Direct		<u>Route D</u> Metra-ICE-CN Hybrid	
	<u>Chicago-Rockford</u>	<u>Chicago-Rockford-Dubuque</u>	<u>Chicago-Rockford</u>	<u>Chicago-Rockford-Dubuque</u>	<u>Chicago-Rockford</u>	<u>Chicago-Rockford-Dubuque</u>	<u>Chicago-Rockford</u>	<u>Chicago-Rockford-Dubuque</u>
Mileage	87.3	184.0	91.9	188.6	85.4	182.2	84.2	181.0
Riders	24,700	53,600	20,000	44,300	35,100	74,500	27,500	58,400
Revenue	\$361,000	\$1,104,000	\$298,000	\$971,000	\$504,000	\$1,512,000	\$400,000	\$1,203,000

b. Levels of Service

Different levels of service are proposed for Rockford service, reflecting who is the prospective carrier.

Amtrak operates intercity passenger rail service. Chicago-Rockford service would be a SSR, mirroring the former Black Hawk service it suspended in 1981. SSR service levels reflect the capacity and willingness of sponsors to fund service. Midwest SSRs operate to seven daily roundtrips, currently averaging three. Assume one trainset will overnight at Rockford (unless/until the route is extended to Dubuque) requiring rudimentary layover facilities (“hotel” power hook-ups, drip pans under locomotives, and a small enclosed space for crew reporting, maintenance support, and material storage).

Metra operates commuter rail service. Rockford would be a 48-mile extension of its MDW Line from Big Timber Rd, west of Elgin. All-day service is assumed with three AM peak trips, requiring rudimentary overnight layover facilities (see Amtrak box) in Rockford for three trainsets. Analysis of MDW train consists suggests Rockford will need a 10-car platform with an overnight storage capacity for two 10-car trains and one 9-car train.

c. Platform Design

The rail platform design is the foundation of any Transit Oriented Development. It establishes how the rail passenger service can be accessed, the synergy between rail facilities and adjacent development, and whether or not trains in the station will block traffic flow creating bottlenecks in the downtown.

A “Bulletproof” Platform Design

This project is somewhat of a hybrid between a commuter train and intercity rail service. Because of its unique status **it will not be operated by either Amtrak or Metra.** Region 1 Regional Planning Council has asked the Project Team to recommend a so-called “bulletproof” platform design, one that will work with either operator.

d. UP Belvidere vs. CN Freeport

There are two scenarios for Metra operating through Rockford to Dubuque:

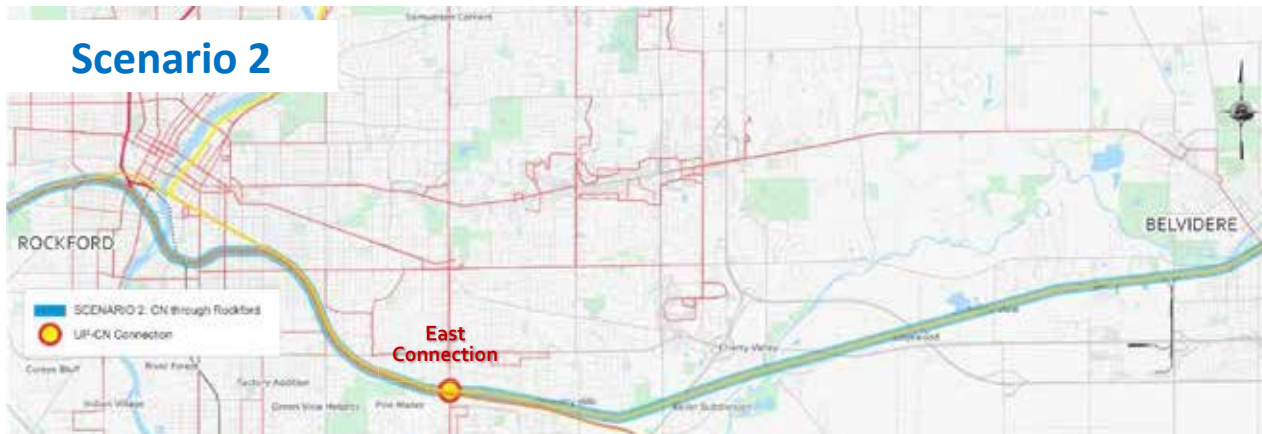
1. Use the UP Belvidere Sub through Rockford, then switch to the CN Freeport Sub via a new connection west of downtown Rockford; or
2. Use the UP Belvidere Sub to a new connection with the CN Freeport Sub east of Rockford, then through Rockford and on to Dubuque via the CN Freeport Sub.

The choice of scenario yields different station sites and development opportunities.

Scenario 1



Scenario 2



e. Siting Considerations

i. Freeing Up Land for Development

To realize the full development potential of the study area site requires the removal of the rail spurs that currently zig-zag through the site. These spurs provide ongoing access for freight rail customers in Rockford. To reduce or eliminate them requires an off-site investment in rail infrastructure: building a new yard west of the site.

ii. UP Belvedere vs. CN Freeport

For many years it has been the assumption that a future rail station would be built at the north end of the study area, immediately south of downtown on the UP/Belvedere tracks. This future rail station has helped spur major redevelopments south of downtown including the Embassy Suites and other projects in the pipeline. This site has many advantages, not the least of which is that people are counting on it. This study has revealed another choice for where to locate the station: on the CN Freeport tracks at the south end of the study area.

iii. Connecting to Downtown Rockford

The study area has extensive street frontage along South Main. This will allow multiple new streets to “tap into” the west side of Main. However due to its high-speed arterial feel and pinched ROW, Main is not a great connection for walking or biking. Winnebago Street to the west is elevated roughly 30’ in the air, making it hard to connect to. This leaves Court and Church Streets to the north as the most strategic way to connect to downtown.

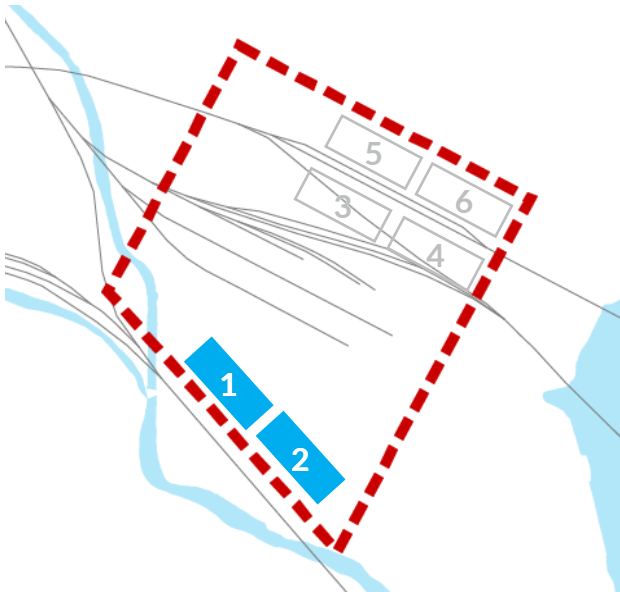
f. Station Location Possibilities

There are six possible station locations:

- 1 + 2: Along the CN Freeport Line, north of the tracks
- 3 + 4: Along the UP Belvidere Line, south of the tracks
- 5 + 6: Along the UP Belvidere Line, north of the tracks

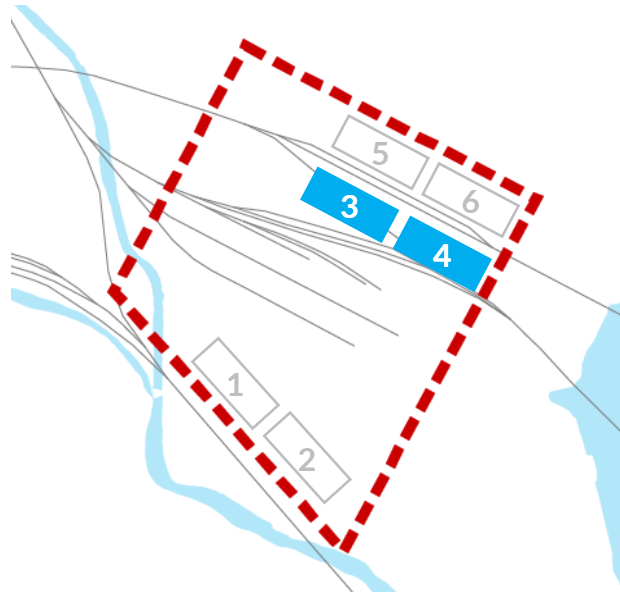
Each location has limitations and advantages.

South Station



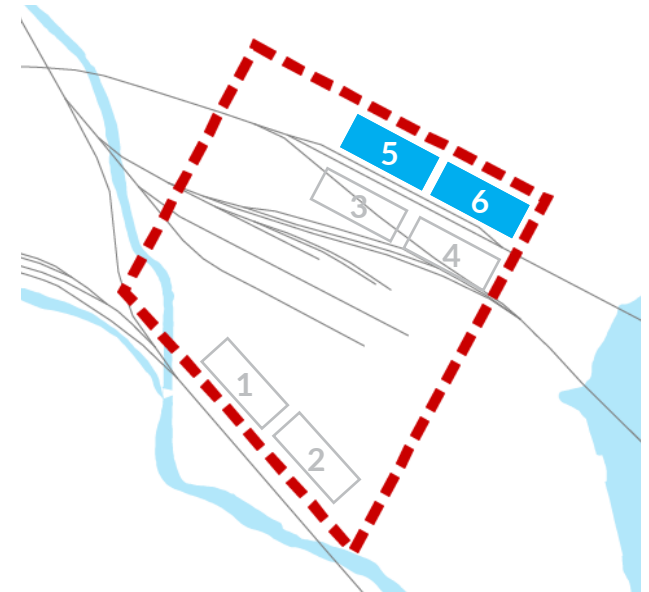
- Requires all railways to be eliminated. While this is possible, it requires additional resources (time, money, etc.)
- Requires strong pull to bring development from downtown to more southern location. Can Rockford grow this much?

North Station (South of Tracks)



- Requires getting past the tracks. This presents a challenge
- Provides additional redevelopment opportunities along Cedar St.

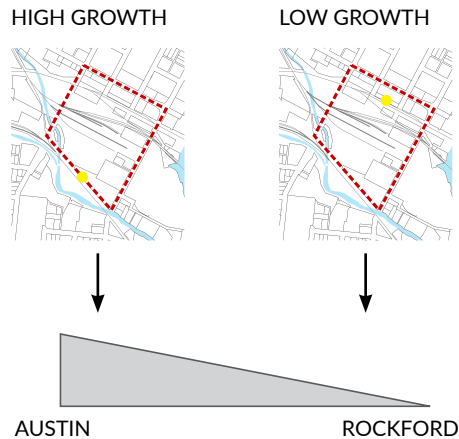
North Station (North of Tracks)



- Most thought-about option
- Does not take full advantage of development potential of study area

g. South Station Evaluation

Can Rockford Grow Enough?



Locating the station on the southern end of the Study Area would make sense in a high-growth scenario such as Austin or Denver. Locating the station on the northern end of the Study Area would make sense in a more infill/redevelopment scenario. Since Rockford is currently experiencing a stable population and market, Rockford may not have the growth potential to fill these 30 acres with development right now.

Can Northern Tracks Go Away?

The south station is only feasible if the UP Belvidere railroad tracks are eliminated altogether. It would not be feasible to connect a southern station with the rest of downtown if there were still an active train line on the northern end of the Study Area as well.

In order to remove the UP Belvidere railroad tracks, the UP Belvidere line would have to connect with the CN Freeport line at a connection point east of downtown; this is not currently being pursued in the concurrent railroad feasibility study; therefore we believe these railroad tracks will remain.

Conclusion:

Not Recommended