Ballard Link Extension

Project updates

International Special Review District

1/14/25

SoundTransit

Why we're here today

- Ballard Link Extension overview
- Chinatown-International District (CID) additional studies for Ballard Link Extension

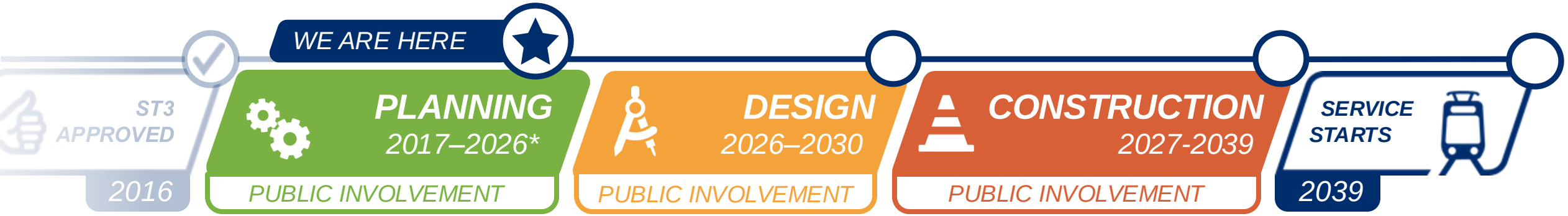
Project overview

Ballard Link Extension

- Included in Sound Transit 3 (ST3) voter approved plan.
- Adds **nearly eight miles of light rail** service, including a **new light rail-only downtown tunnel**.
- Includes **nine new stations** from Chinatown-International District to Ballard.

Ballard Link Extension (BLE)

Project timeline



*The BLE project timeline will be updated when additional information is available.

PLANNING

DES

2017–2023

Alternatives development

- 2018: Early scoping
- 2019: Scoping
- 2019: Sound Transit Board identifies preferred alternatives and other alternatives

Environmental review

- 2022: Publish West Seattle Ballard Link Extension (WSBLE) Draft Environmental Impact Statement (EIS)
- 2023: Sound Transit Board confirms or modifies preferred alternatives

2024–2026

Environmental review

Fall 2024: NEPA Scoping

2025: Publish BLE Draft EIS

Public comment period

Board confirms or modifies preferred alternatives

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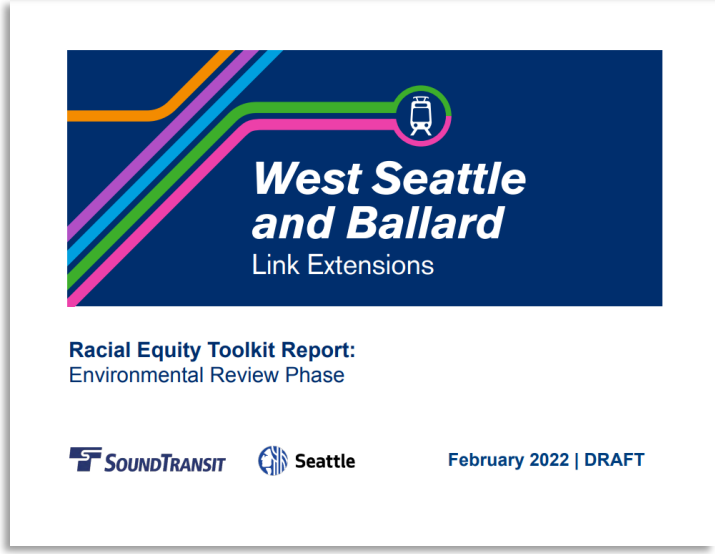
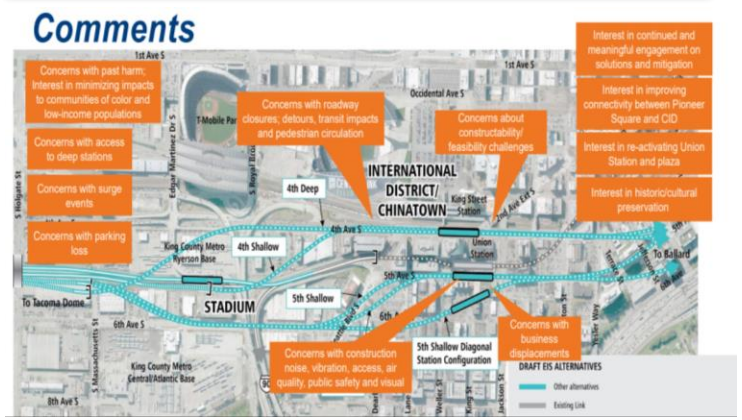
Federal Record of Decision

PUBLIC INVOLVEMENT

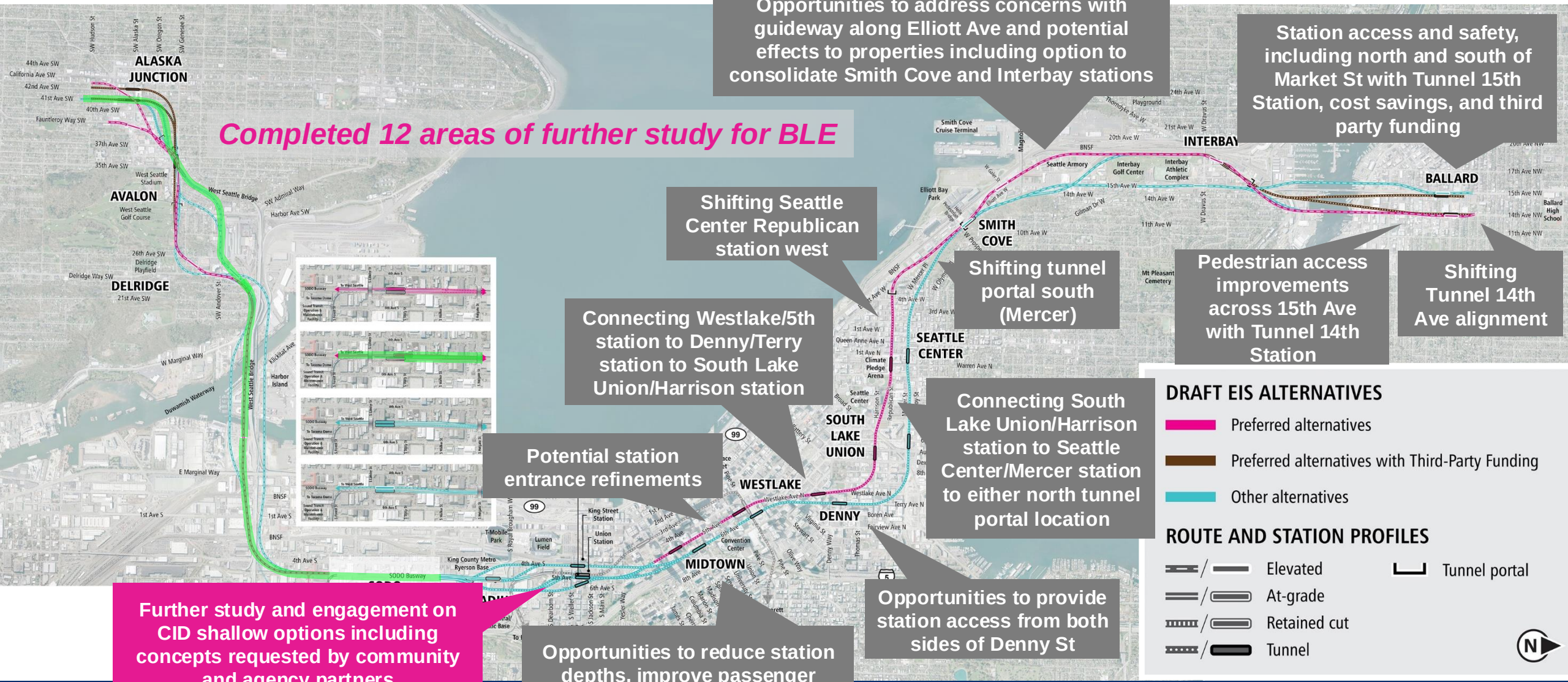
Racial Equity Toolkit: Centering community input

- Recognize the multitude of past harms inflicted on the community from past infrastructure projects and policies that have ongoing effects today
- Strong concern over displacement of businesses in the CID, which are valued as places of gathering and community wealth-building, and potential loss of cultural identity and community ownership of land
- Desire to see additional near-term engagement between community and agency partners to collectively address remaining questions, minimize potential impacts and maximize community benefits, whether as part of design, through mitigation approaches, or as part of broader partnerships
- Support for investment in public spaces that foster connections between CID and Pioneer Square, promote safety and a sense of belonging, and support for an improved experience for riders accessing transit services





BLE Areas of Further Study Completed (2022-2023)



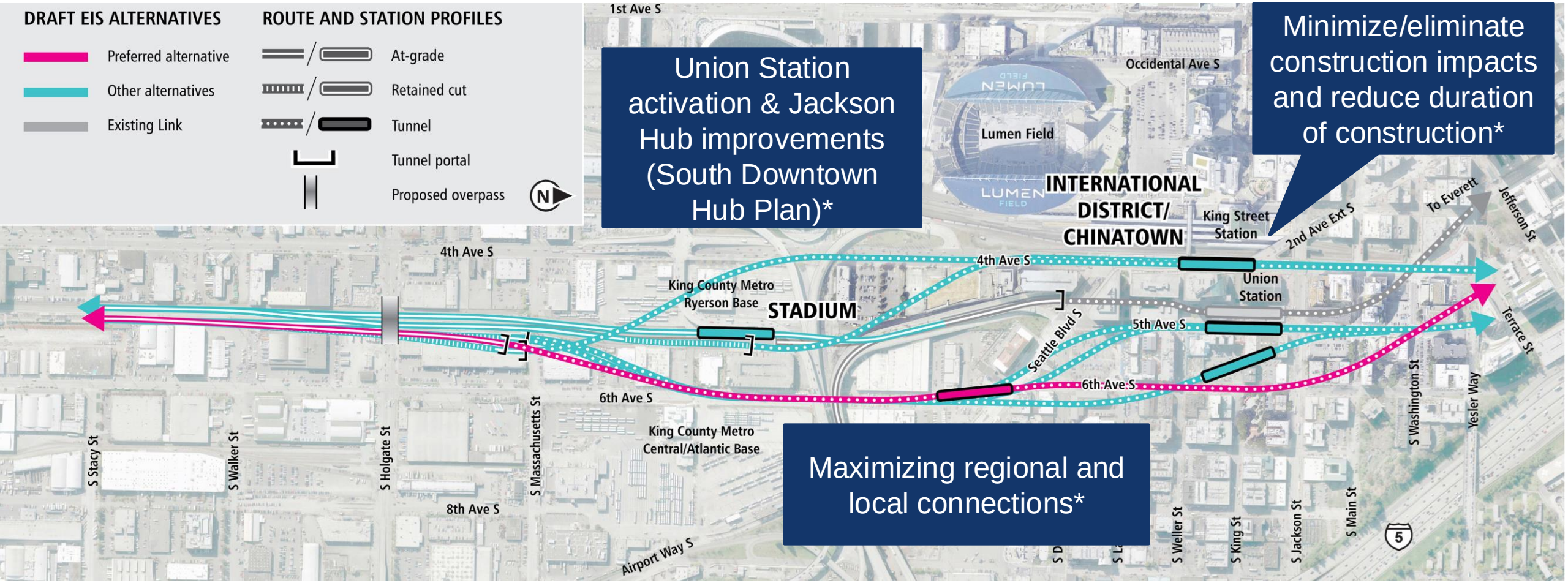
SOUNDTRANSIT

Ballard Link Extension alternatives

- Preferred alternative
- Other Environmental Impact Statement (EIS) alternatives

SoundTransit

Draft EIS Alternatives *Chinatown-International District / South Downtown*



Key areas identified in Board motion from March 2023 for additional study

Note: The International District/Chinatown Station 4th Avenue Shallow and 4th Avenue Shallower Alternatives would necessitate reconstruction of the existing Stadium Station. Diagrams are not to scale and all measurements are approximate for illustration purposes only.

ST3 APPROVED

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PLANNING

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SOUNDTRANSIT

Construction approach and duration review

Construction approach and duration review

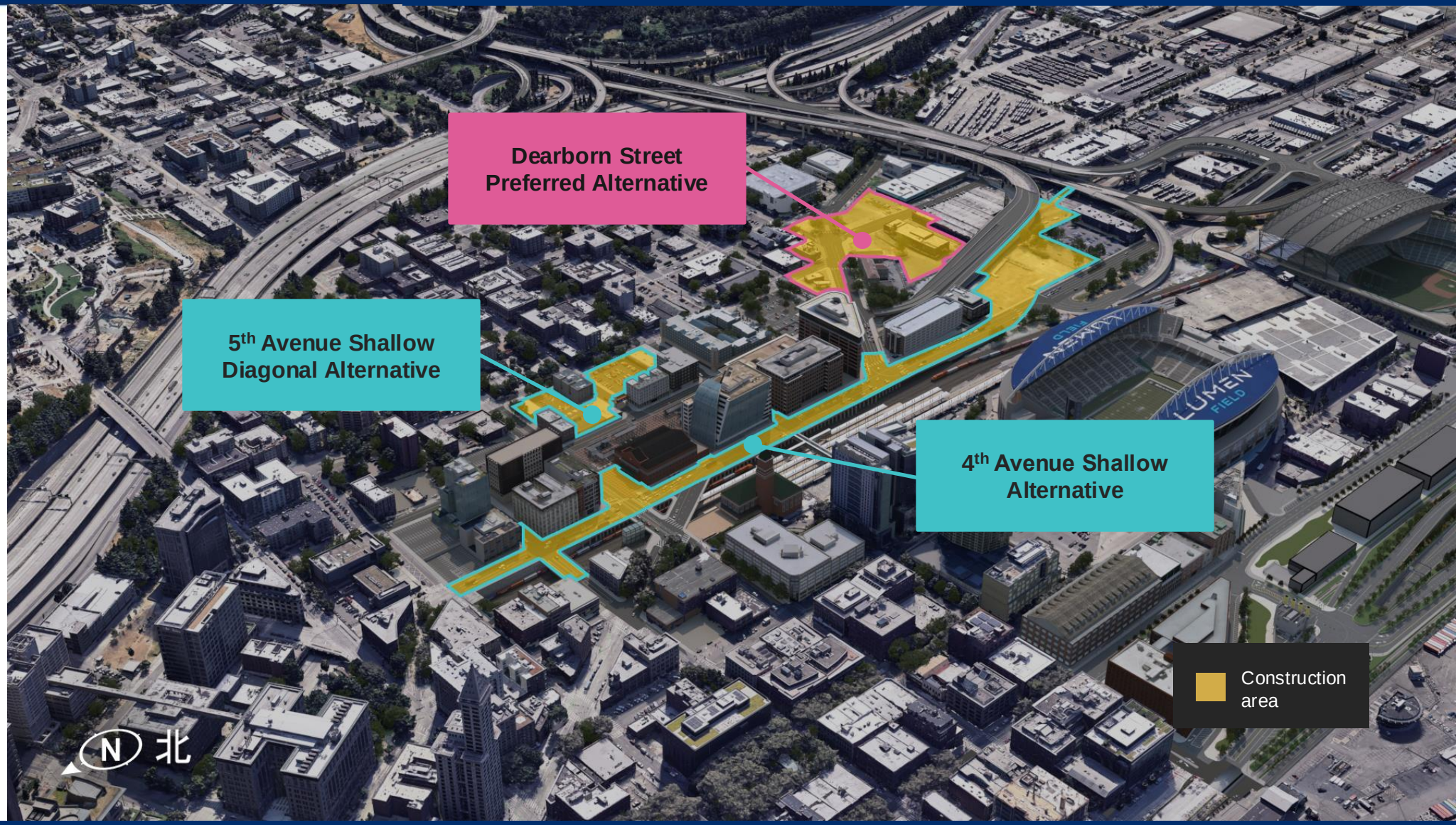
Based on community feedback and Sound Transit Board requests, the Sound Transit technical team **conducted the following activities to optimize CID alternatives**:

- ✓ Conducted extensive **further studies in the fall of 2022 and early 2023**, including engaging community through workshops, consultants and agency partners.
- ✓ Engaged with the **independent consultant** to the Sound Transit Board to review refinement ideas, particularly for the 4th Avenue Shallow alternative, and gather any additional ideas.
- ✓ **Convened an independent expert panel** to review the design for CID alternatives, construction approach and duration, and to offer new ideas on how to construct the 4th Ave Shallow Alternative in support of reducing construction duration and impacts.
- ✓ **Refined the design and construction approach to incorporate opportunities** that may reduce the construction duration and/or related impacts.

Station Alternatives

The following provides information on **construction duration drivers** and **construction activities** associated with the following CID Station alternatives:

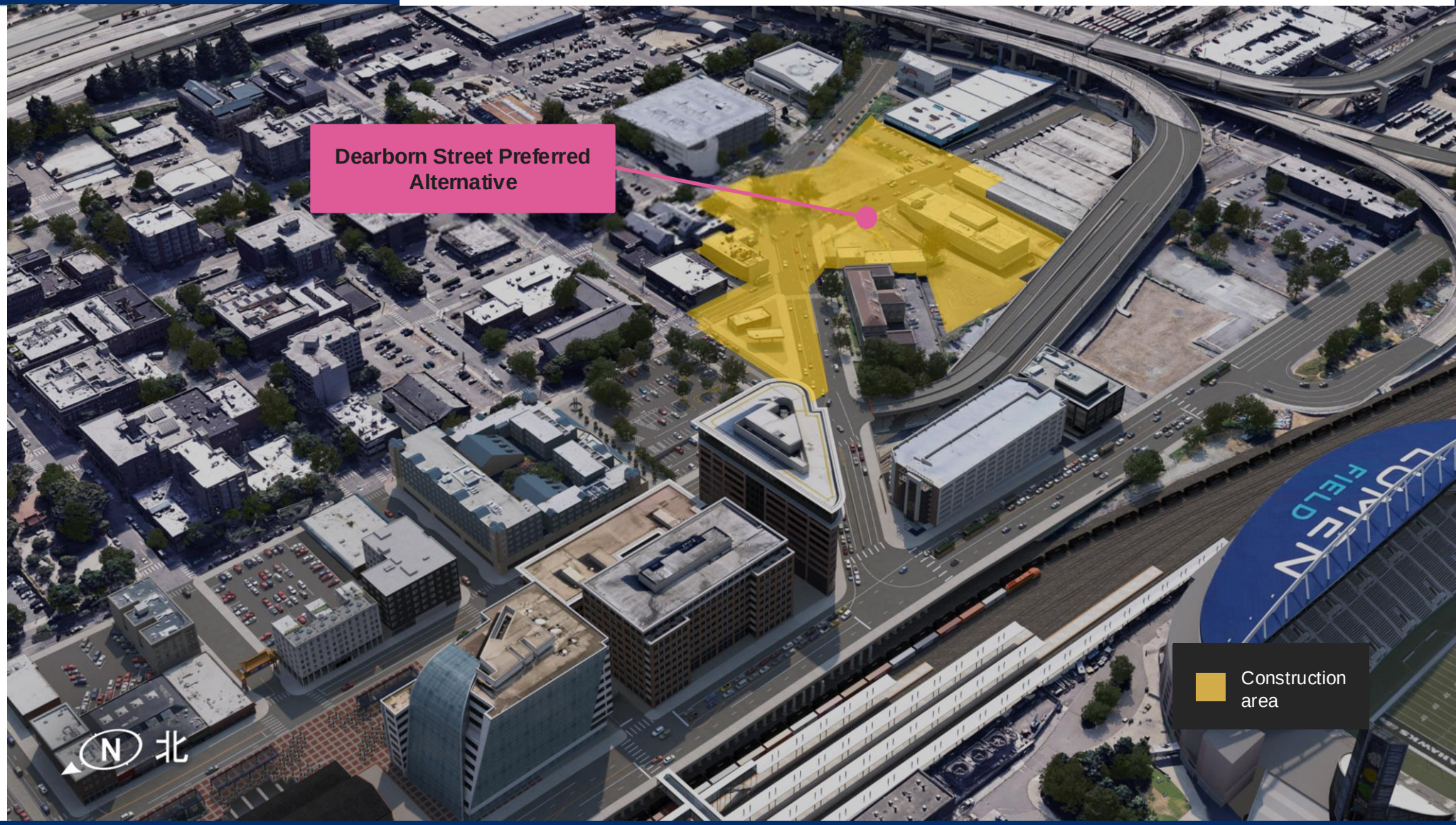
- Dearborn Street Preferred Alternative
- 5th Avenue Shallow Diagonal Alternative
- 4th Avenue Shallow Alternative



Diagrams are an approximate representation of station configuration and construction sequence based on conceptual design for illustrative purposes only.

Dearborn Street Preferred Alternative

Dearborn Street Preferred Alternative



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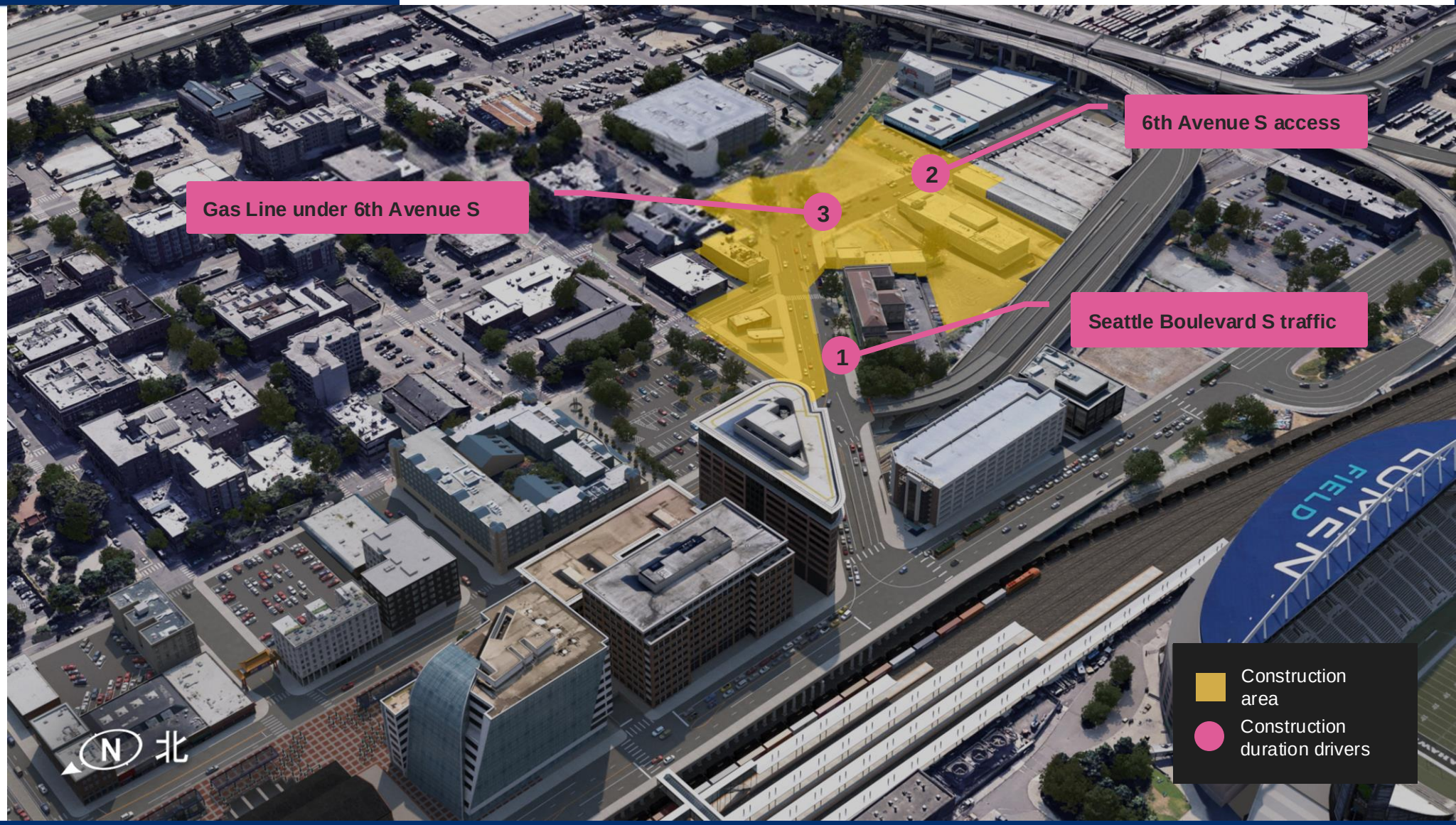
Dearborn Street Preferred Alternative

Construction Duration Drivers



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Dearborn Street Preferred Alternative

Construction Sequence and Methods

Stage One: Station excavation

Major work during this stage would include:

1. Demolition of existing buildings
2. Gas line relocation (if protecting in place is determined not to be possible)
3. Decking to maintain traffic on Seattle Boulevard S
4. Station wall construction
5. Station excavation

This work is anticipated to take approximately three years.

YEARS OF CONSTRUCTION

1	2	3	4	5	6	7

Diagrams are an approximate representation of station configuration and construction sequence based on conceptual design for illustrative purposes only.

Dearborn Street Preferred Alternative

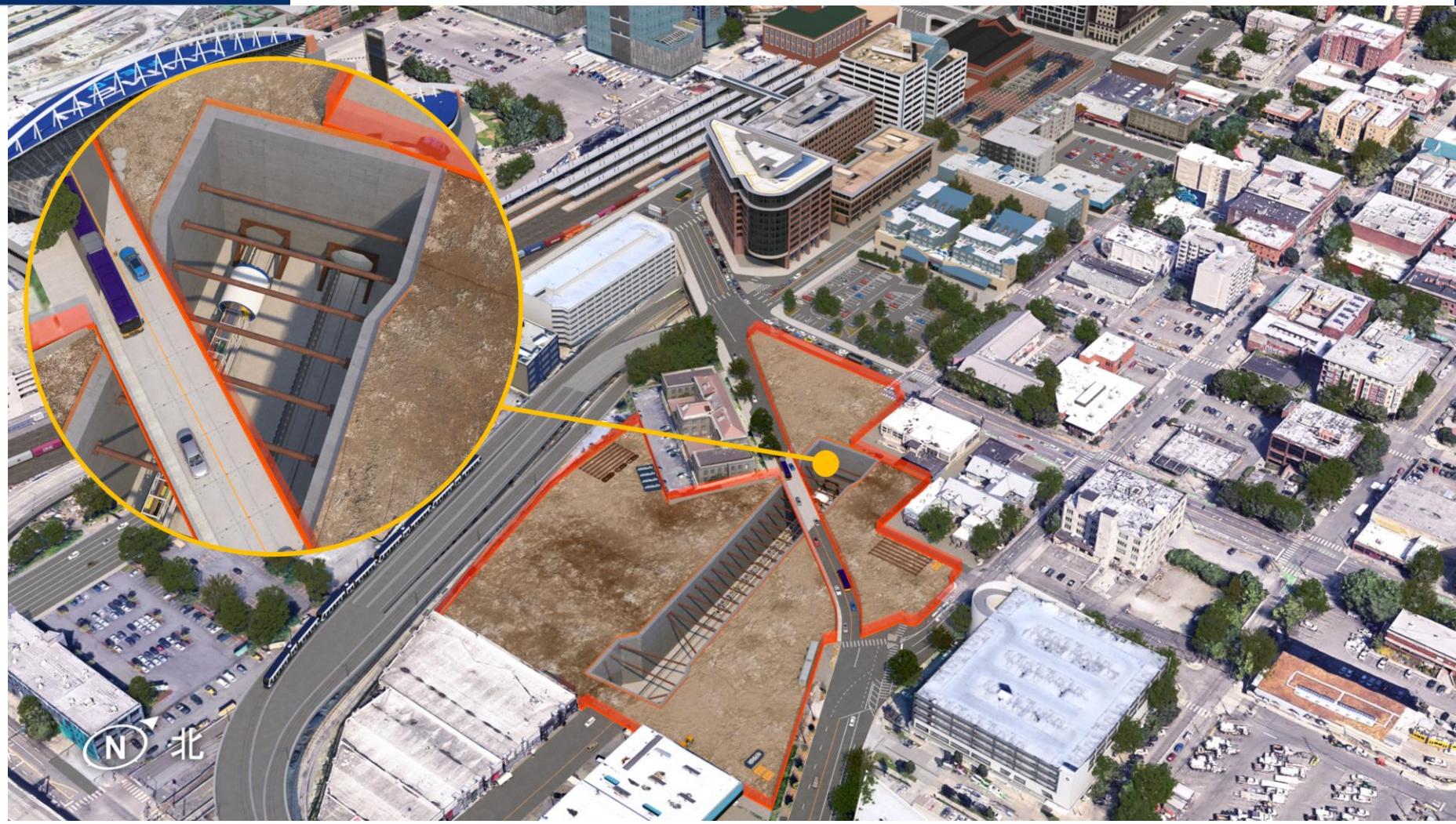
Construction Sequence and Methods

Stage Two: Tunnel Boring Machine (TBM) arrivals/departures

Major work during this stage would include:

1. TBM arrival at the station
2. TBM maintenance and re-launch of TBMs to next station

This work is anticipated to take approximately one year of intermittent activity.



YEARS OF CONSTRUCTION

1	2	3	4	5	6	7

Diagrams are an approximate representation of station configuration and construction sequence based on conceptual design for illustrative purposes only.

Dearborn Street Preferred Alternative

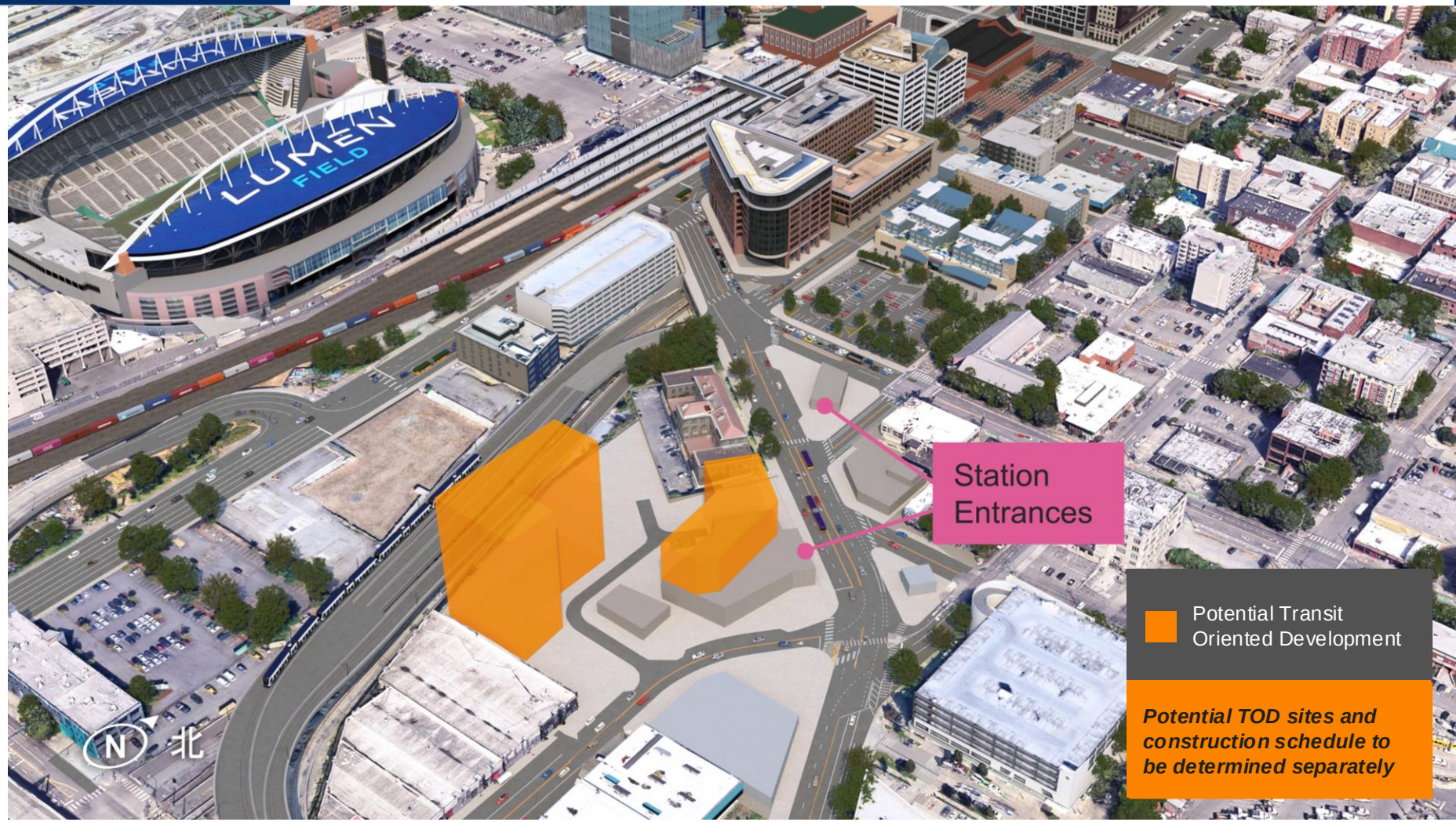
Construction Sequence and Methods

Stage Three: Station internal structures

During this stage, station finishes would be installed, including:

1. Station platforms, escalators, elevators, and station entrances
2. Track, signal, Mechanical and electrical systems
3. Roadway restoration
4. Construction complete

This work is anticipated to take approximately two to three years.



YEARS OF CONSTRUCTION

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5th Avenue Shallow Diagonal Alternative

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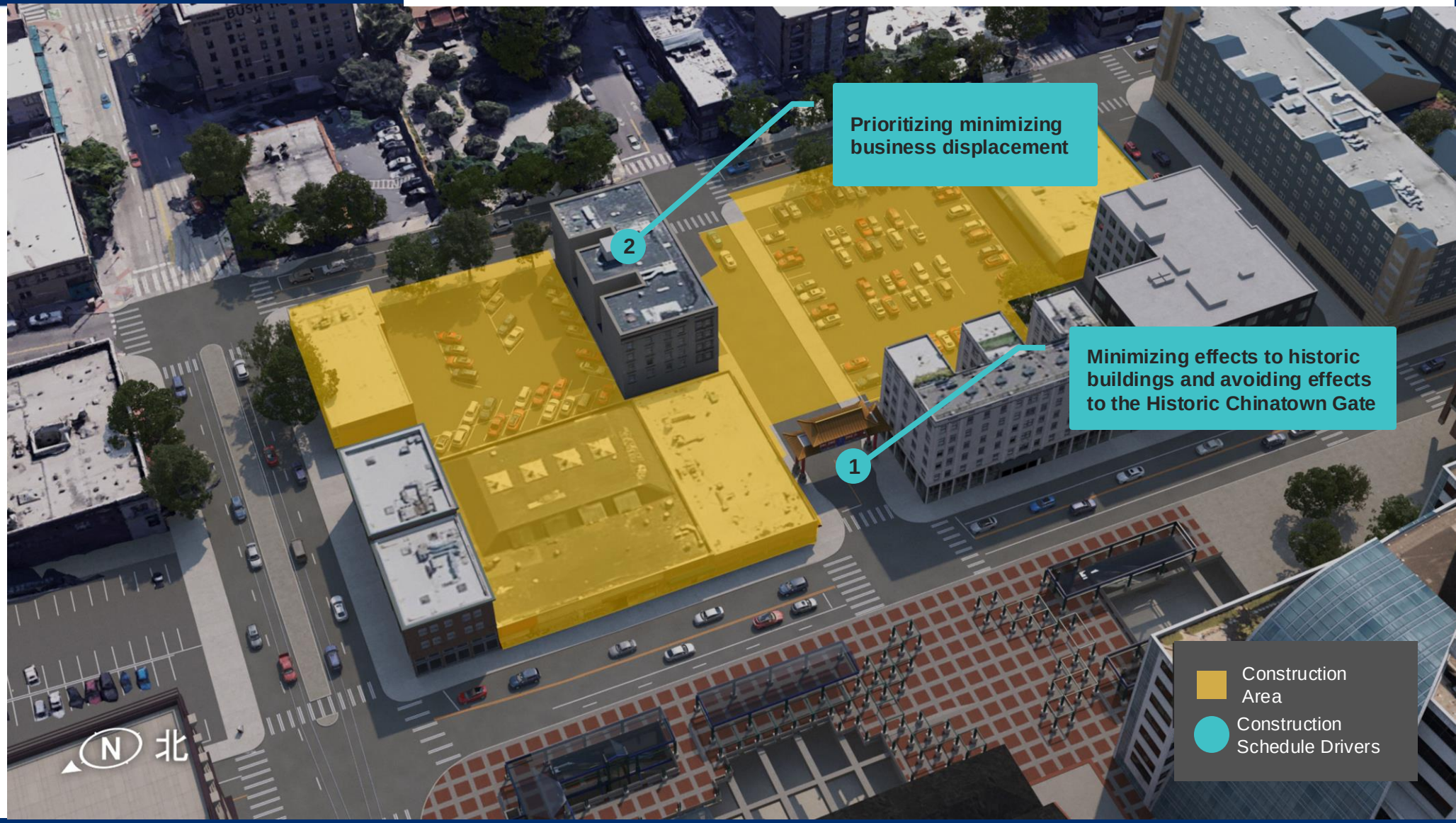
5th Avenue Shallow Diagonal Alternative

Construction Duration Drivers



Diagrams are an approximate representation of station configuration and construction sequence based on conceptual design for illustrative purposes only.

5th Avenue Shallow Diagonal Alternative

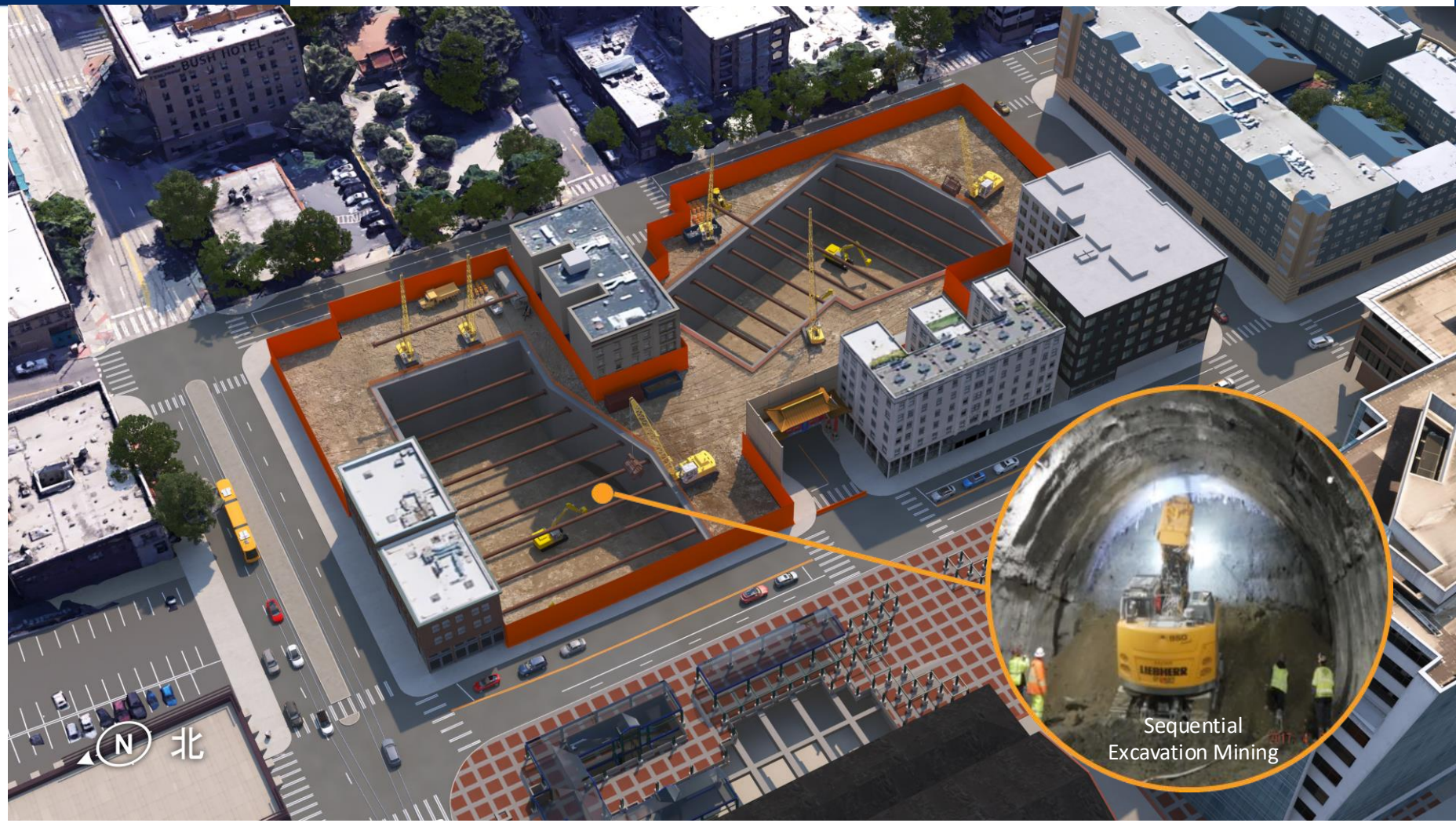
Construction Sequence and Methods

Stage One: Station excavation

Major work during this stage would include:

1. Protection of Historic Chinatown Gate
2. Demolition of certain existing buildings identified within the construction area
3. Station wall construction
4. Station excavation and mining

This work is anticipated to take approximately two years.



YEARS OF CONSTRUCTION

1	2	3	4	5	6

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5th Avenue Shallow Diagonal Alternative

Construction Sequence and Methods

Stage Two: Tunnel Boring Machine (TBM) arrivals

Major work during this stage would include:

1. TBM arrival at the station
2. TBM removal and transport from site

This work is anticipated to take approximately one year of intermittent activity.

YEARS OF CONSTRUCTION

1	2	3	4	5	6

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5th Avenue Shallow Diagonal Alternative

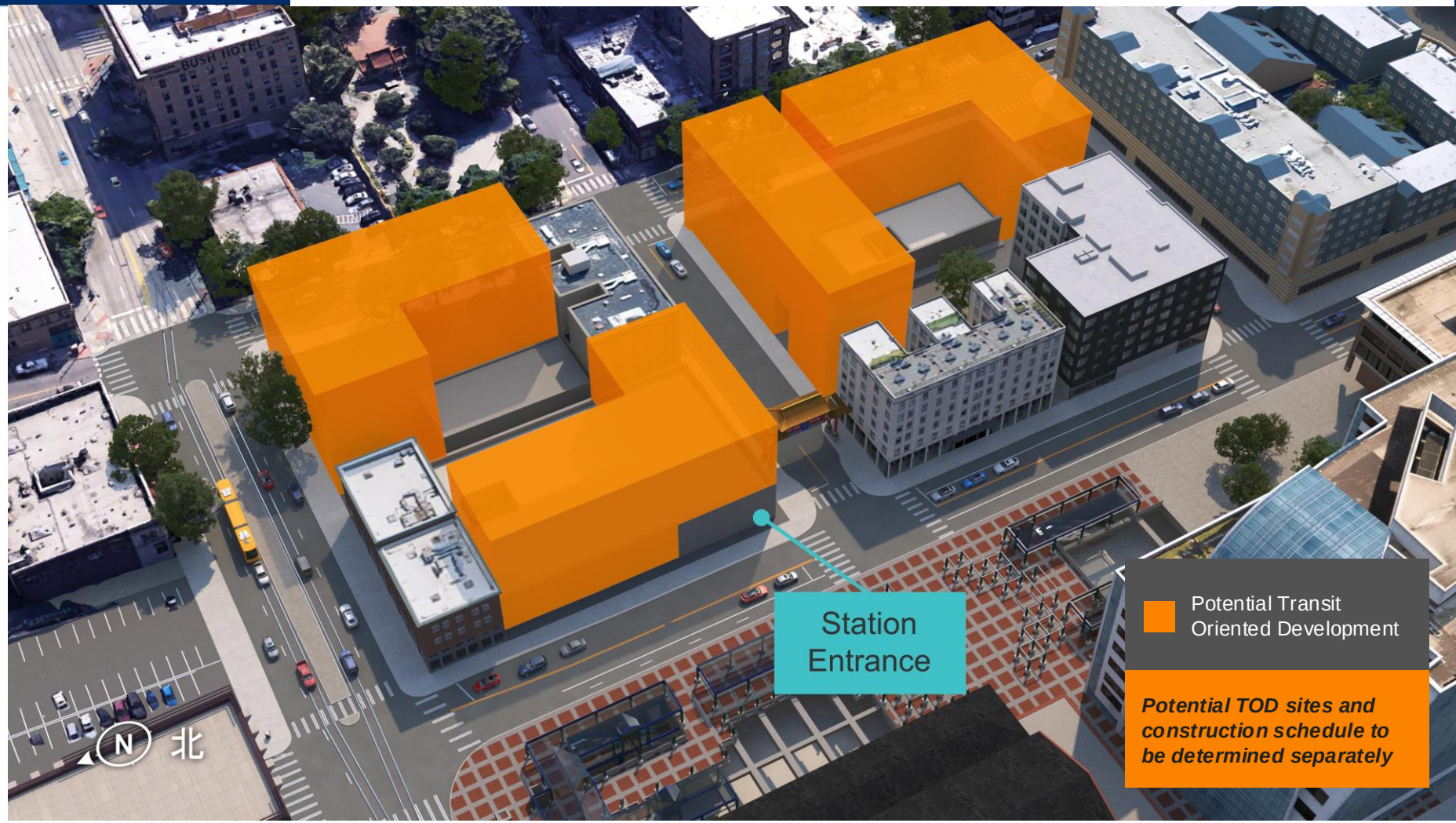
Construction Sequence and Methods

Stage Three: Station internal structures

During this stage, station finishes would be installed, including:

1. Station platforms, escalators, elevators, and station entrances
2. Underground passenger connection to existing International District/Chinatown Station
3. Track, signal, mechanical and electrical systems
4. Construction complete

This work is anticipated to take approximately two to three years.



YEARS OF CONSTRUCTION

1	2	3	4	5	6

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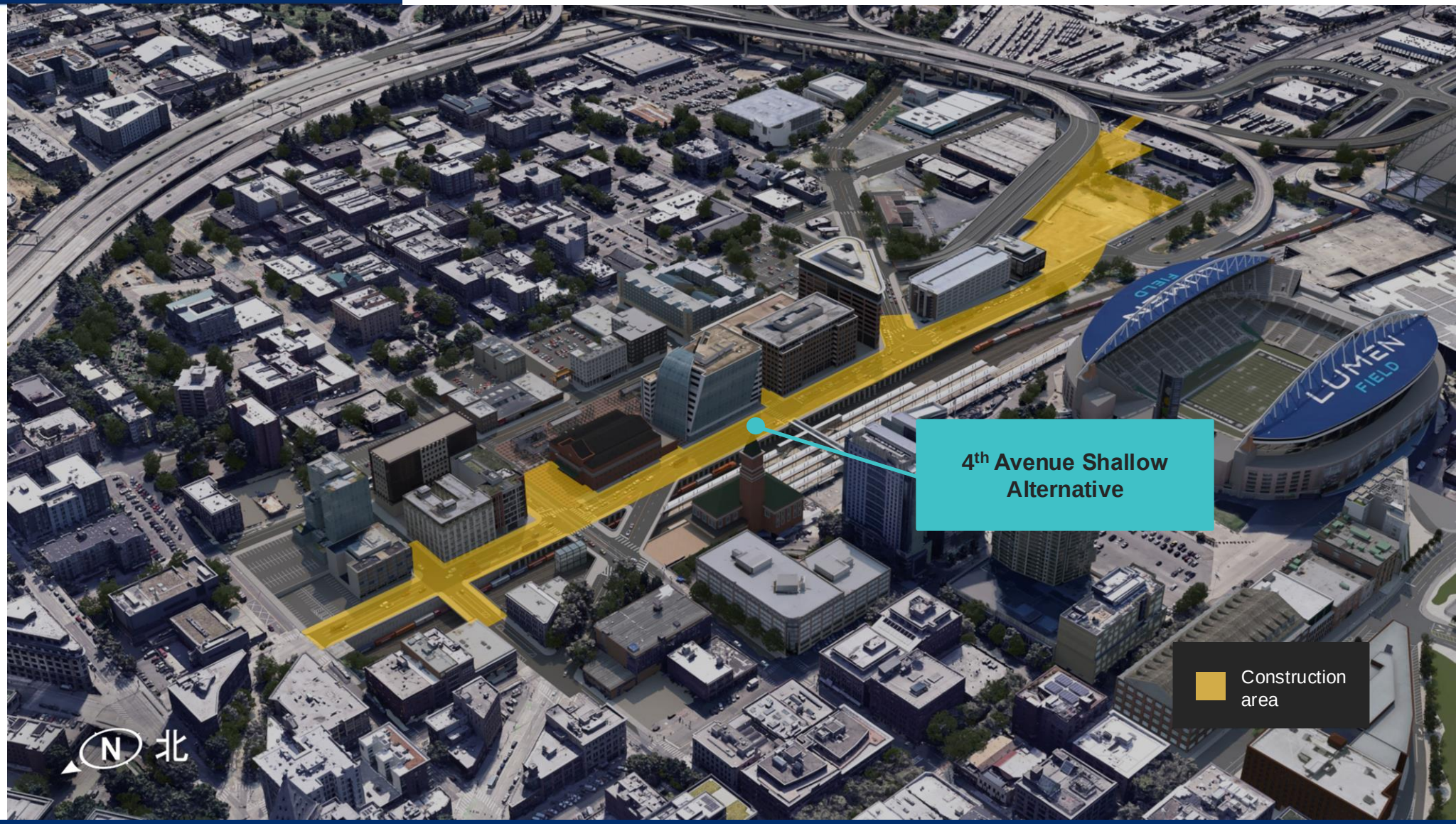
4th Avenue Shallow Alternative

4th Avenue Shallow Alternative



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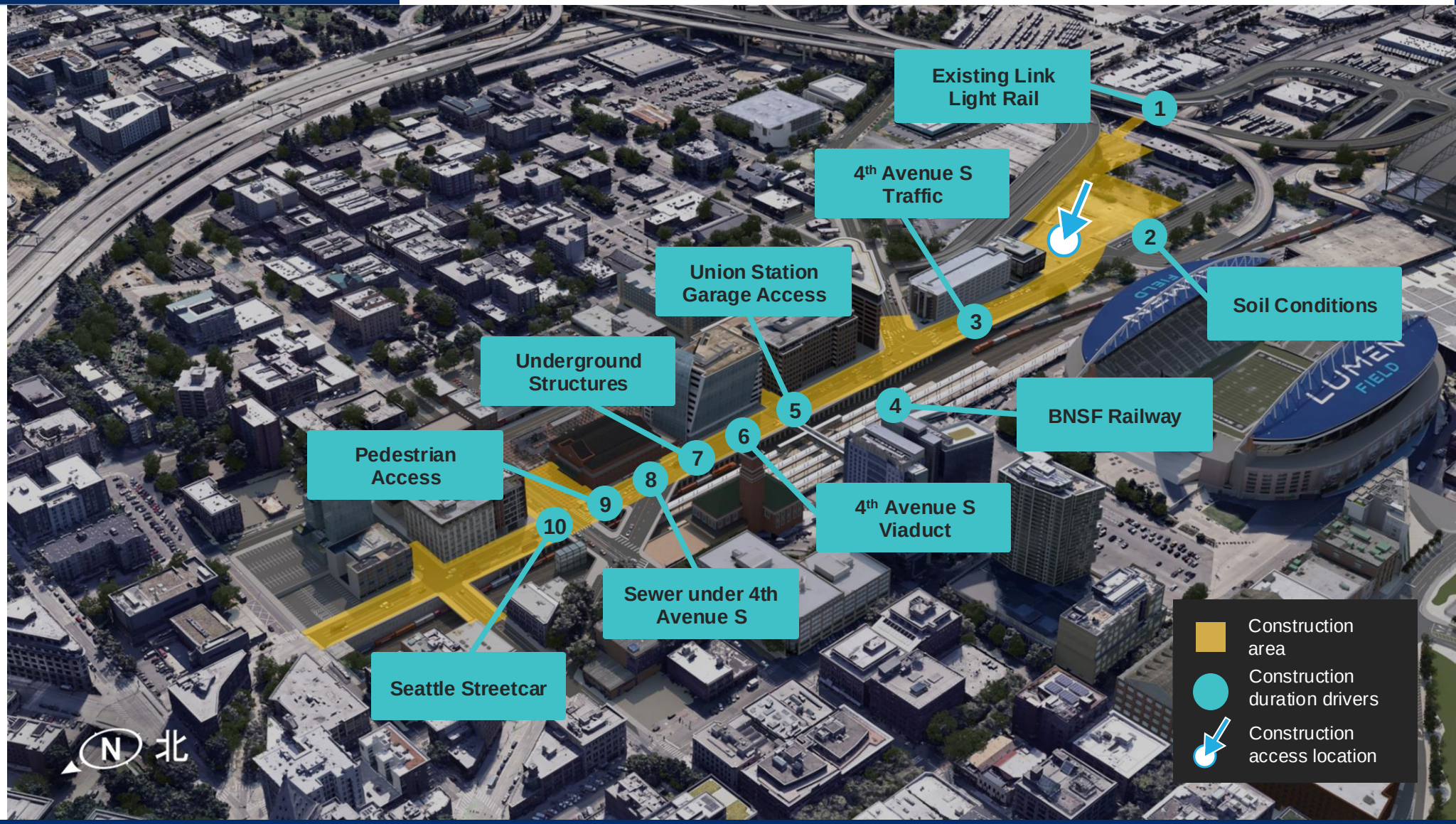
4th Avenue Shallow Alternative

Construction Duration Drivers



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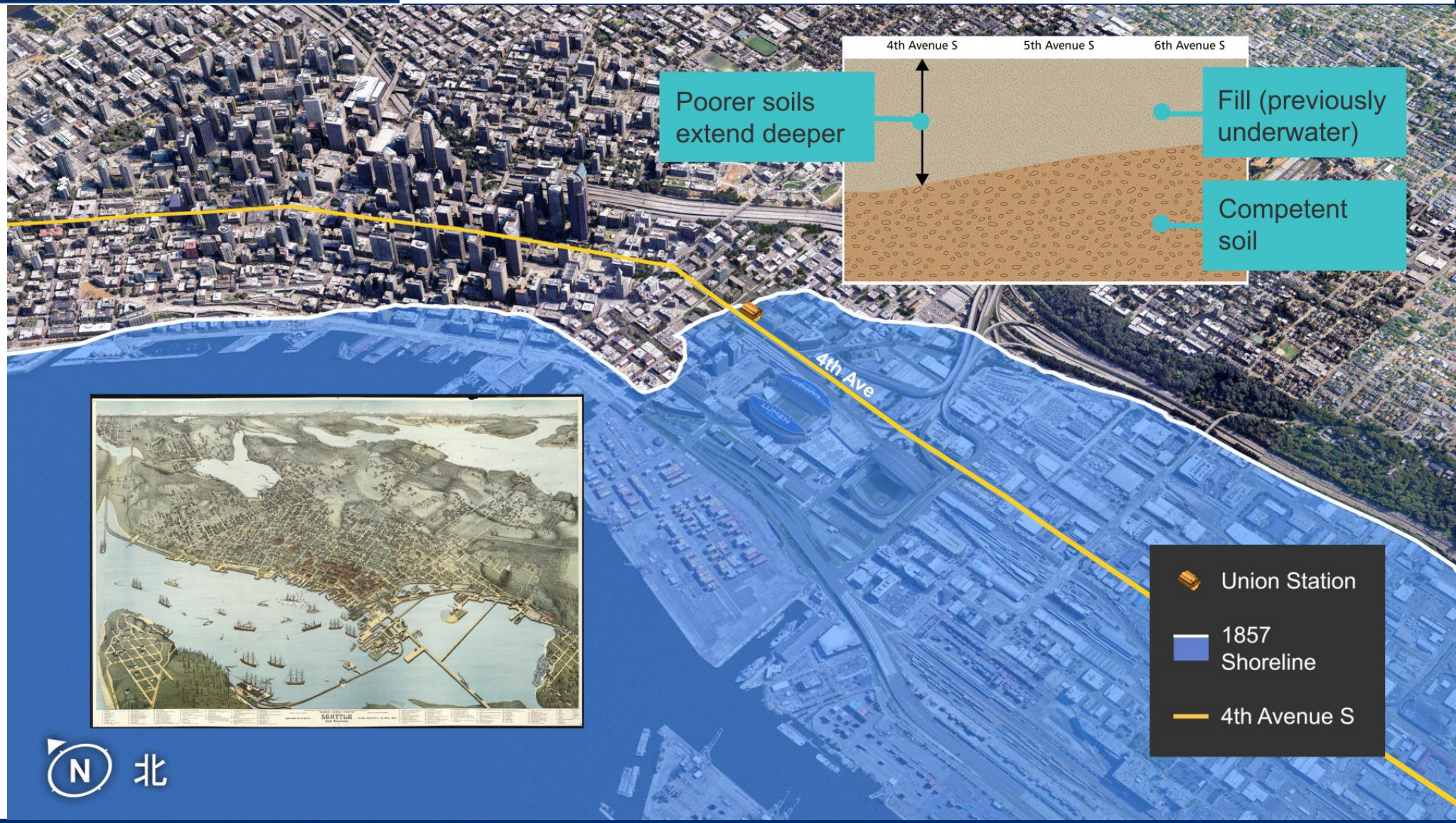
4th Avenue Shallow Alternative

Construction Duration Drivers

- **Soil Conditions**



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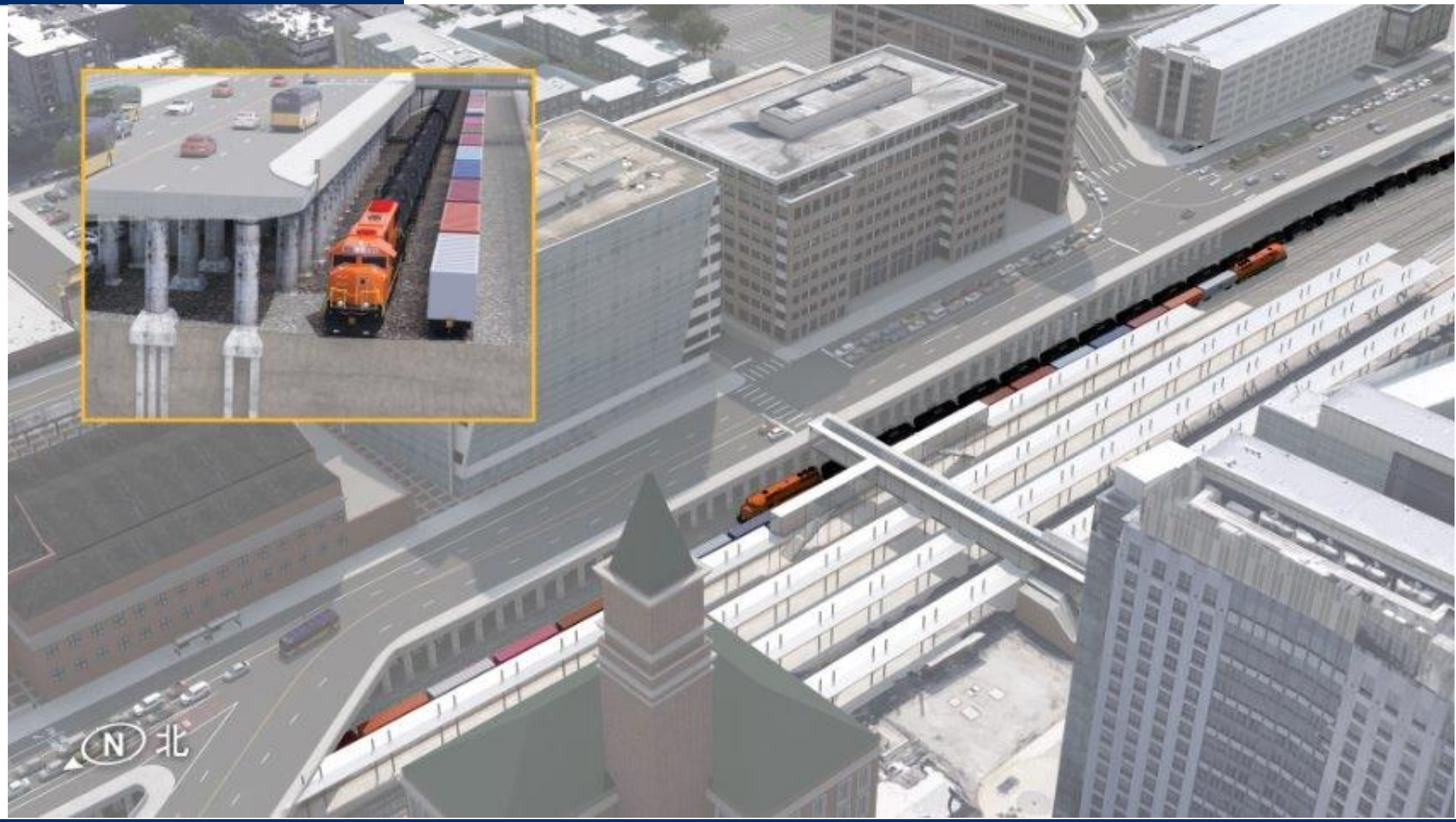
4th Avenue Shallow Alternative

Construction Duration Drivers

- **BNSF Railway**



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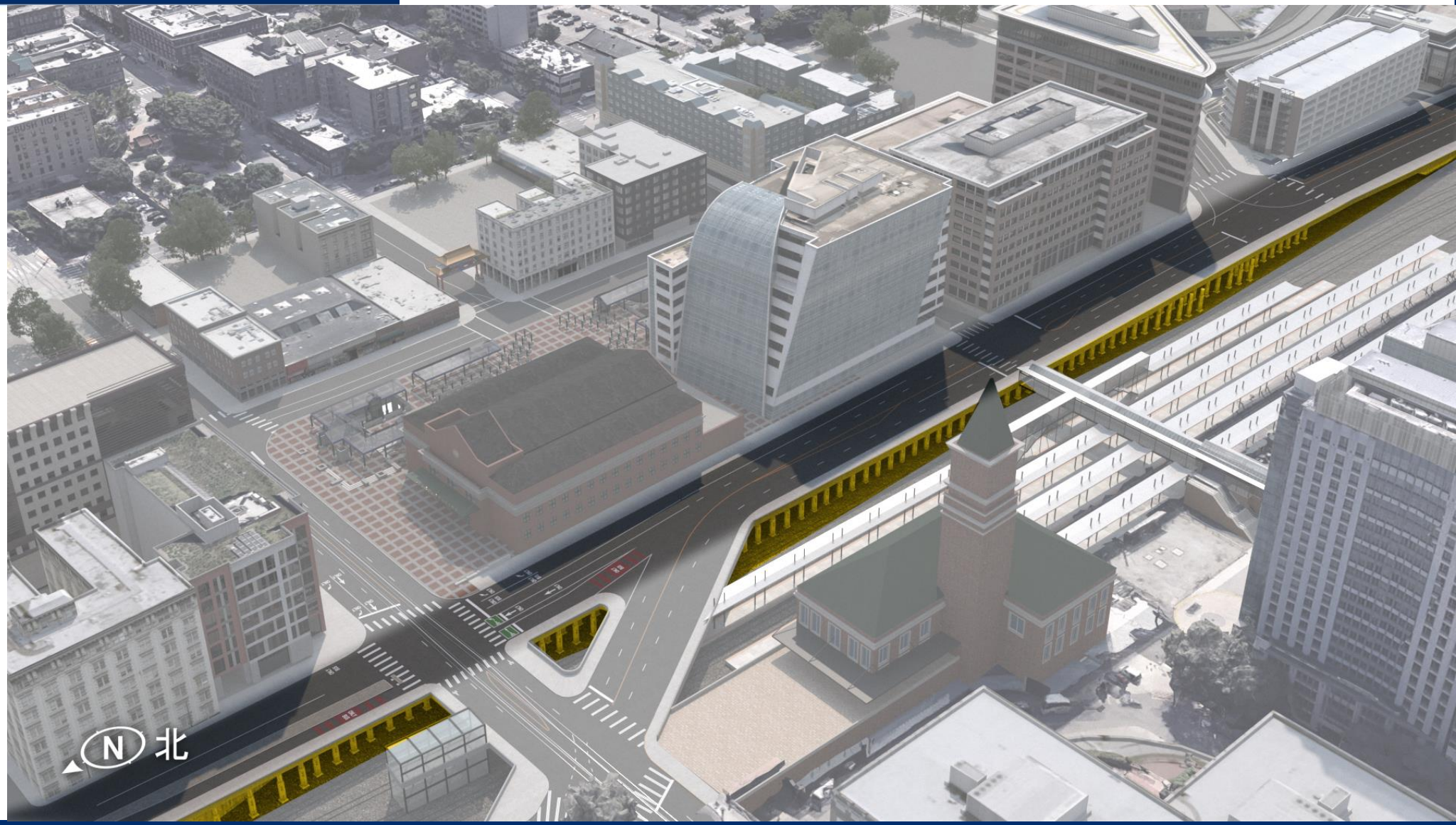
4th Avenue Shallow Alternative

Construction Duration Drivers

- 4th Avenue S Viaduct



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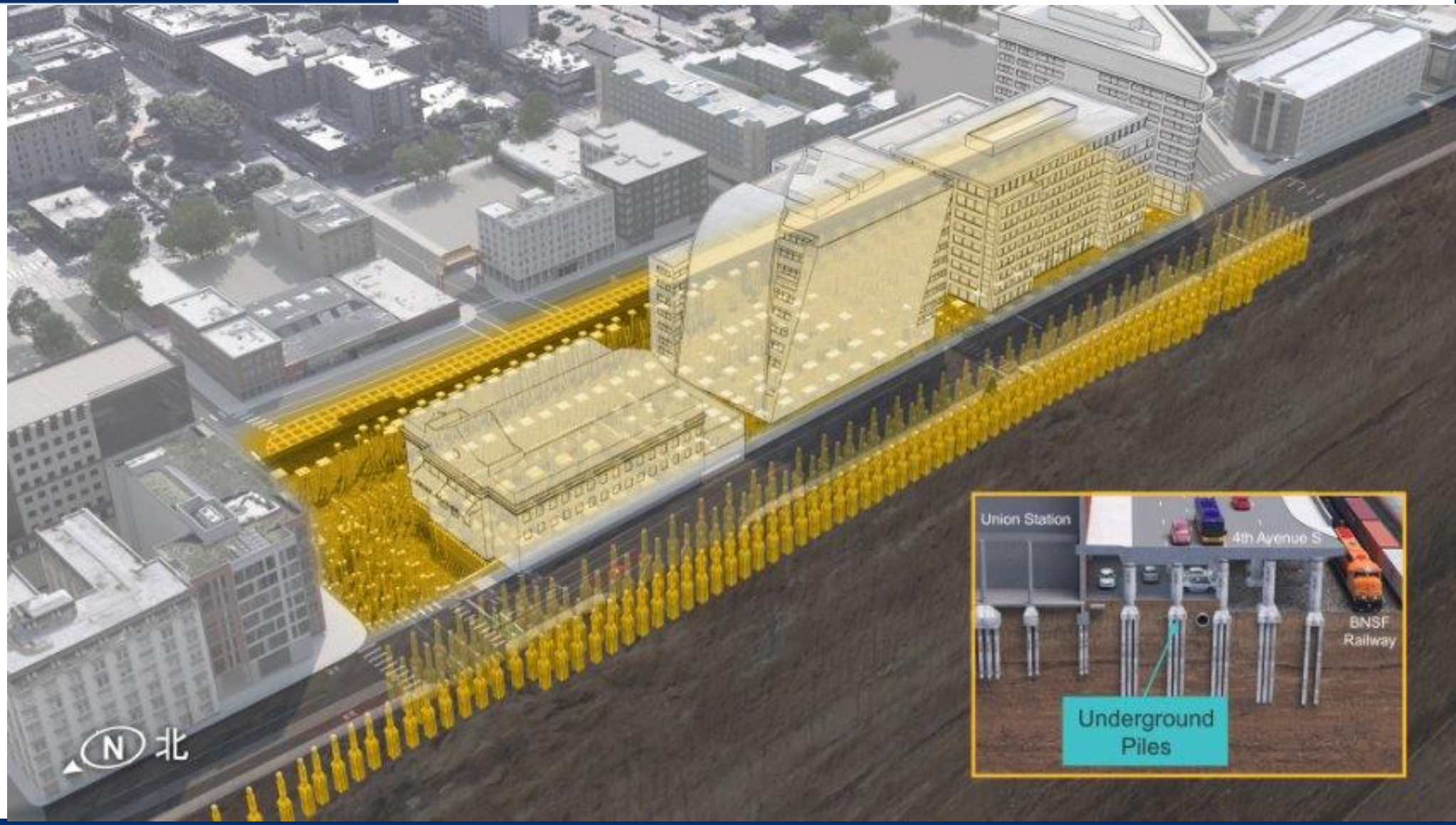
4th Avenue Shallow Alternative

Construction Duration Drivers

- **Underground Structures**



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4th Avenue Shallow Alternative construction sequence and methods

4th Avenue Shallow Alternative

Construction Sequence and Methods

Construction Activities

- 3 stages spanning 10 to 12 years
- Activities include ideas moved forward from refinement process

YEARS OF CONSTRUCTION											
1	2	3	4	5	6	7	8	9	10	11	12

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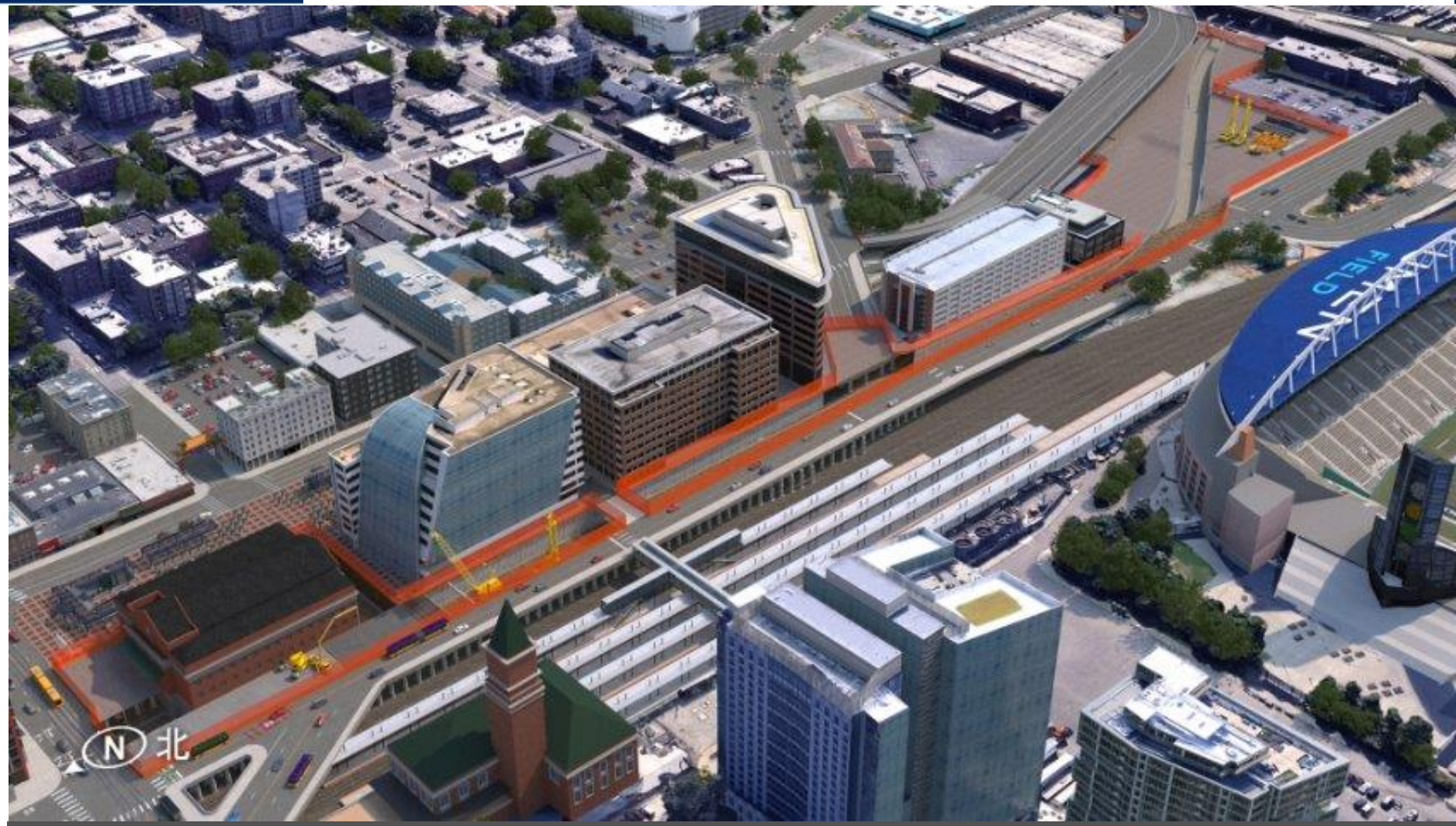
4th Avenue Shallow Alternative

Construction Sequence and Methods

Stage One: I-90 to S Jackson Street, east side of 4th Avenue S

1. 4th Avenue S viaduct demolition
2. Cut-and-cover tunnel construction
3. New permanent 4th Avenue S structure and roadway construction

This is anticipated to take approximately two years.



YEARS OF CONSTRUCTION

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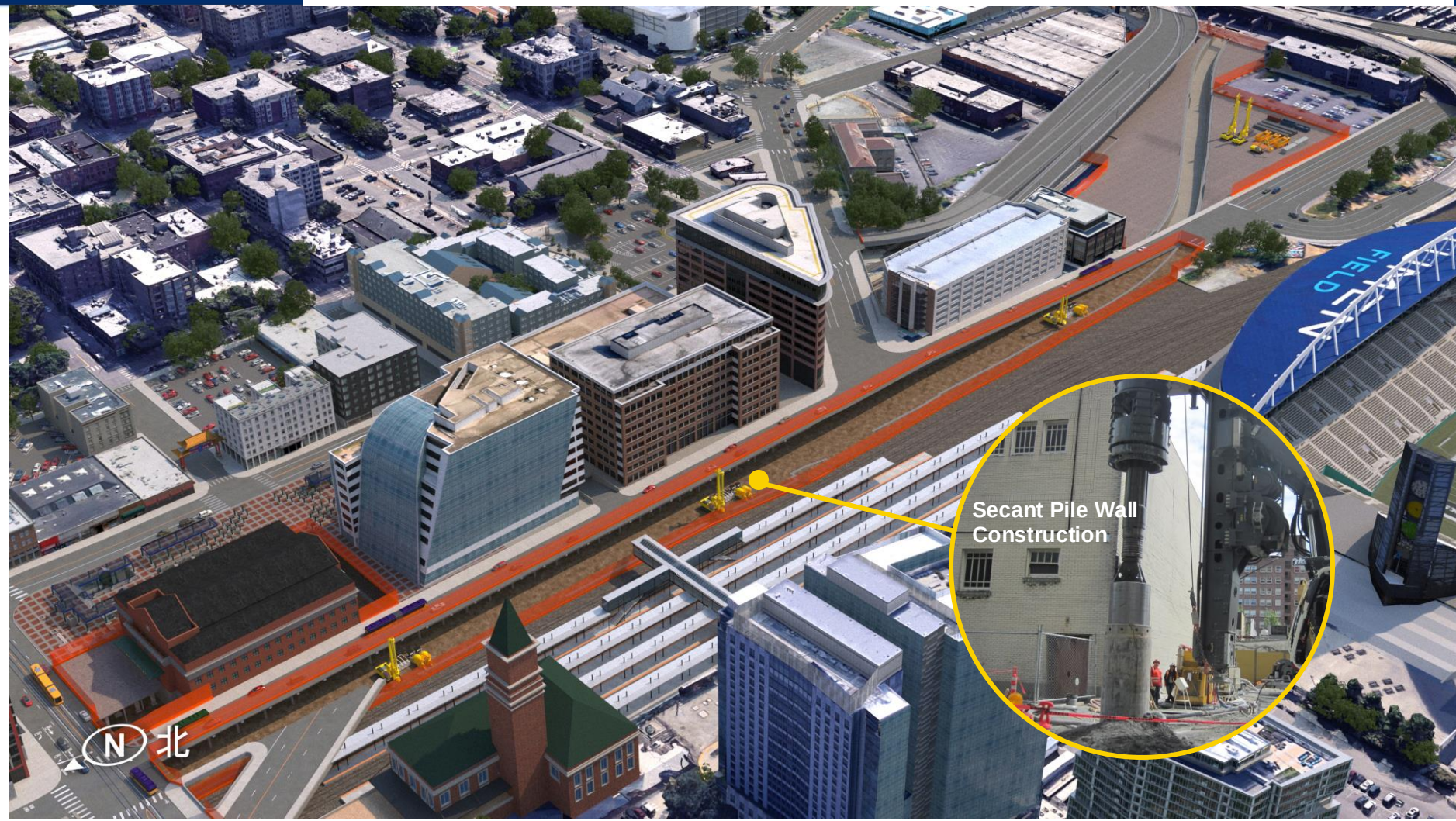
4th Avenue Shallow Alternative

Construction Sequence and Methods

Stage Two: I-90 to Jackson Street, west side of 4th Avenue S

1. 4th Avenue S viaduct demolition
2. **Cut-and-cover tunnel construction**
3. New permanent 4th Avenue S structure and roadway construction
4. Sewer line relocation
5. Station and tunnel excavation under new 4th Avenue S viaduct

This stage is anticipated to take approximately three years.



YEARS OF CONSTRUCTION

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4th Avenue Shallow Alternative

Construction Sequence and Methods

Stage Three: S Jackson Street to S Main Street

1. Temporary decking for ICON apartment building
2. S Main Street bridge demolition over BNSF train tracks
3. **4th Avenue S viaduct demolition and S Jackson Street**
4. **Demolition of a retaining wall system adjacent to the BNSF train tracks**
5. Cut-and-cover tunnel construction
6. New permanent 4th Avenue S roadway and S Jackson Street bridge reconstruction
7. S Main Street bridge reconstruction over BNSF train tracks

This is anticipated to take approximately four years.

YEARS OF CONSTRUCTION

1	2	3	4	5	6	7	8	9	10	11	12

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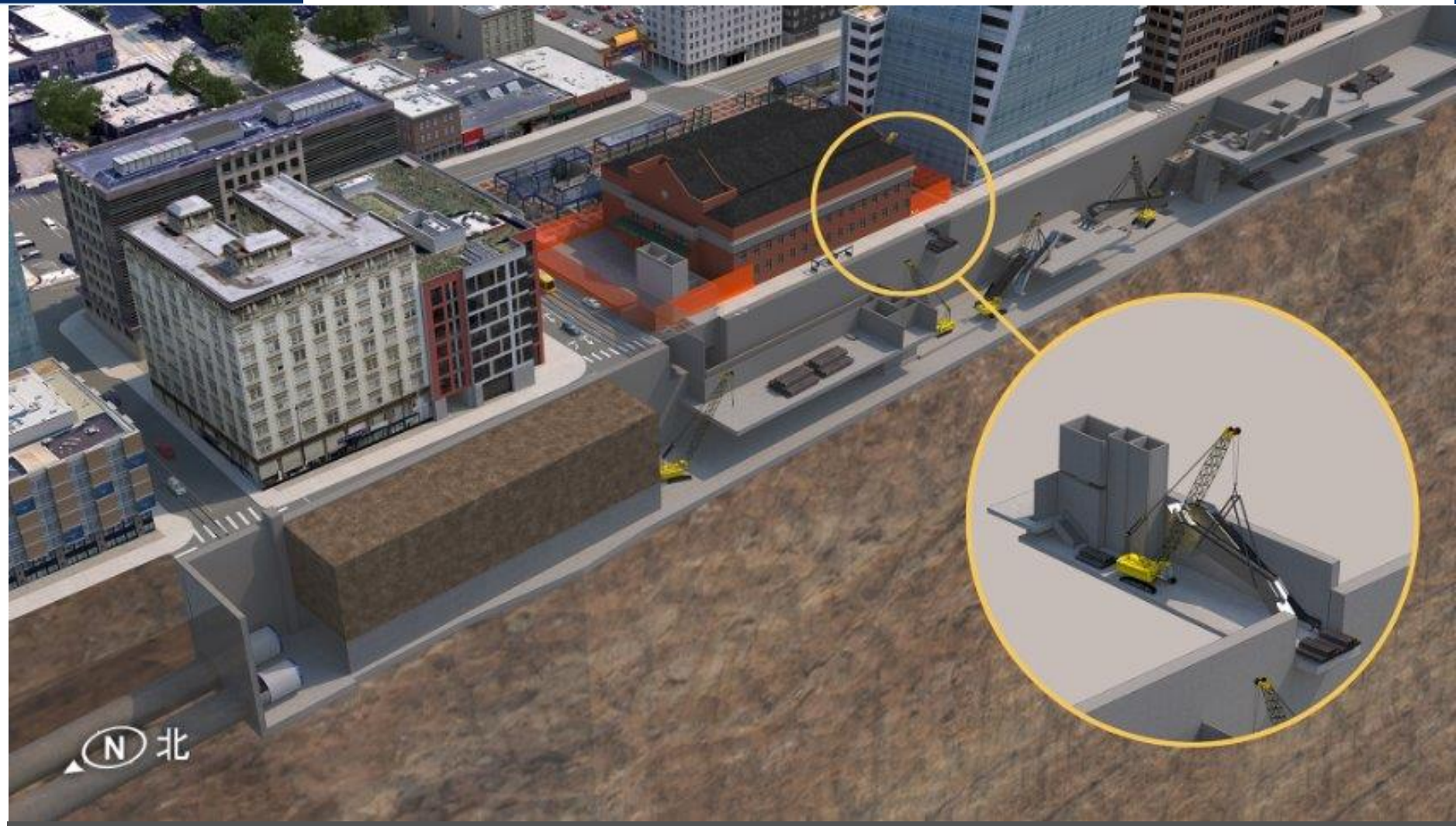
4th Avenue Shallow Alternative

Construction Sequence and Methods

Stage Four: Station construction

1. **Station platforms, escalators, elevators, and station entrances**
2. **Underground passenger connection to existing International District/Chinatown Station**
3. **Track, signal, mechanical and electrical systems**
4. Construction complete

This is anticipated to take approximately five to seven years and would overlap with Stage 3.



YEARS OF CONSTRUCTION

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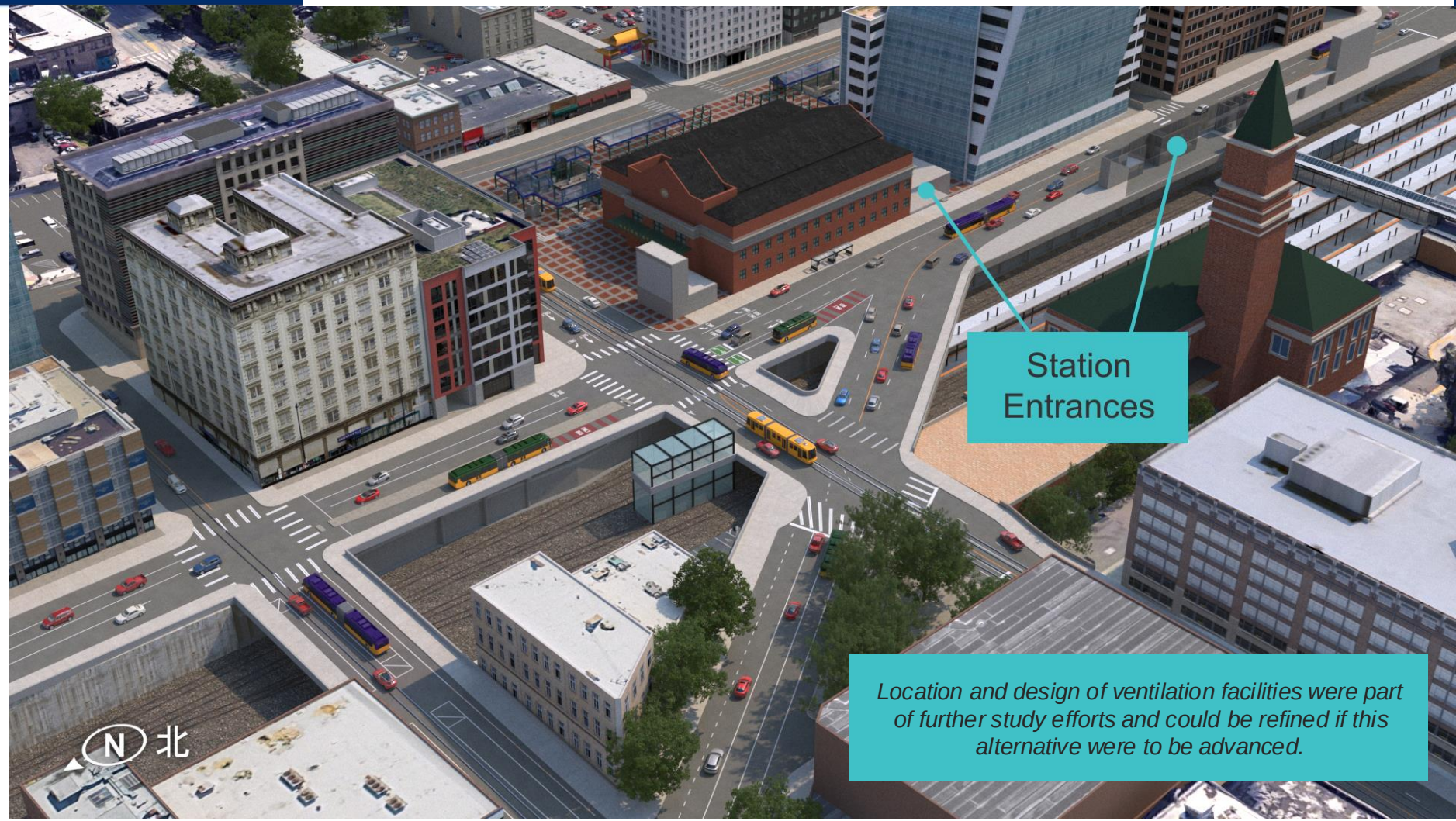

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4th Avenue Shallower Alternative

Additional major work includes:

- Cut-and-cover tunnel construction between S Main Street and Jefferson Street
- Reconstruction of retaining wall adjacent to BNSF train tracks between S Main Street and Jefferson Street
- Yesler Way bridge reconstruction (S Main Street bridge over BNSF train tracks would not be demolished and reconstructed)

This work would occur during Stage 3 and have a similar construction duration as Stage 3 for 4th Shallow Alternative.

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Maximizing regional and local connections

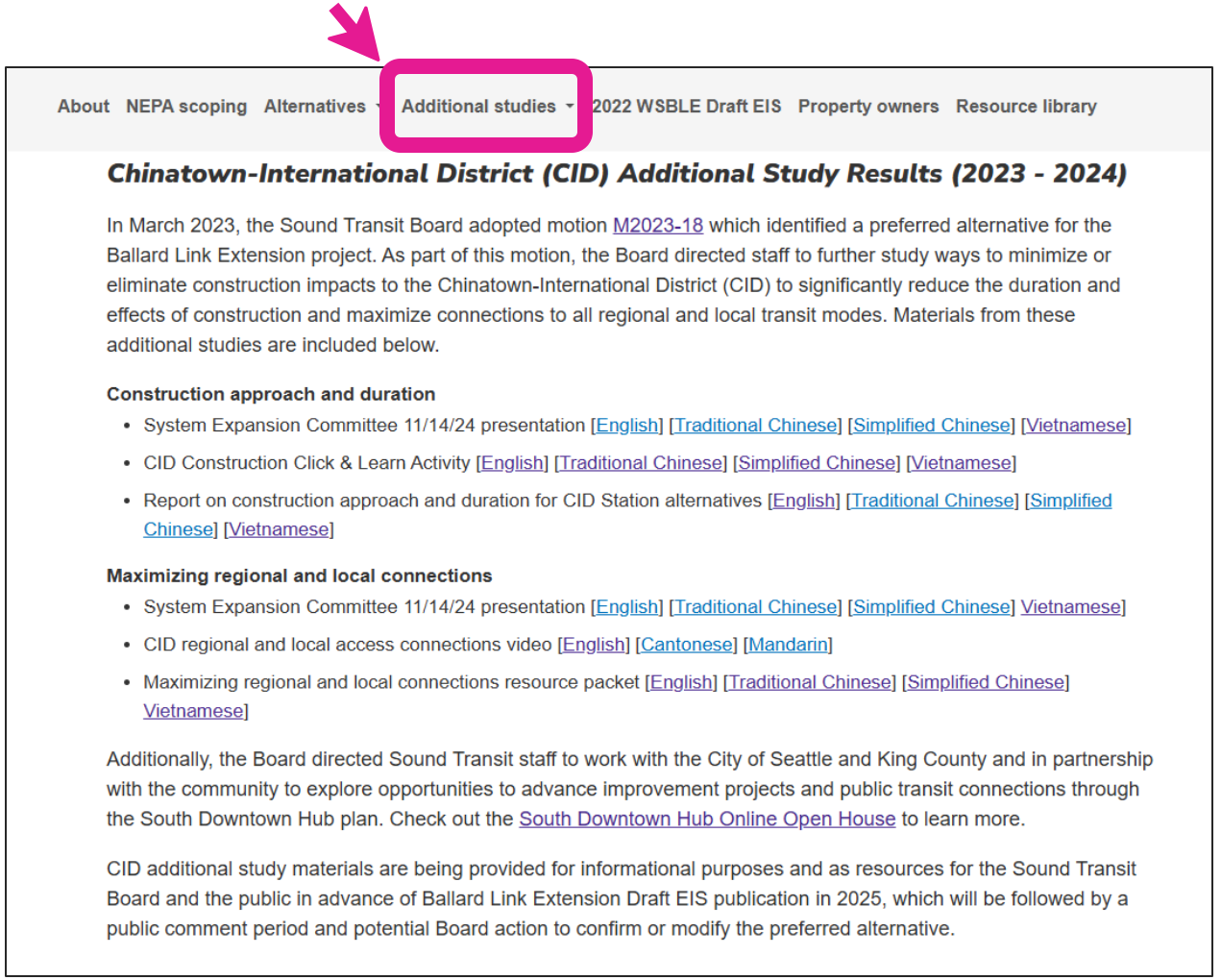
Maximizing regional and local connections

- **Developed ridership assessment** to understand difference for local and regional travel between alternatives
- **Assessed differences to regional and local access trips** (examined sample trips, updated trip times and assessed how trips might differ and who would experience those differences)
- **Developing pedestrian and transit access improvements** through South Downtown Hub and Ballard Link Extension planning process
- **Exploring station and transfer path refinements** to improve access and passenger experience
- **Upcoming: Developing wayfinding and signage recommendations** to improve system and station access legibility

CID Additional Study Results Online

*Learn more about **construction approach and duration** CID Station alternatives, efforts to **maximize regional and local connections** and **accessibility**, including opportunities to advance improvement projects and public transit connections through the South Downtown Hub planning process.*

➢ ***ballardlink.participate.online***



Discussion and Next Steps

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PUBLIC INVOLVEMENT

Overview

- ❑ Partnership of Sound Transit, City of Seattle, King County, and community towards an implementable plan.
- ❑ Through engagement series, working on visioning and prioritization of potential investments to streets and public spaces that help connect neighborhoods and regional transit modes.
- ❑ Builds upon and scales up past community-based plans and concurrent projects and planning initiatives.

SOUTH DOWN TOWN HUB

Thank you

SOUNDTRANSIT

soundtransit.org

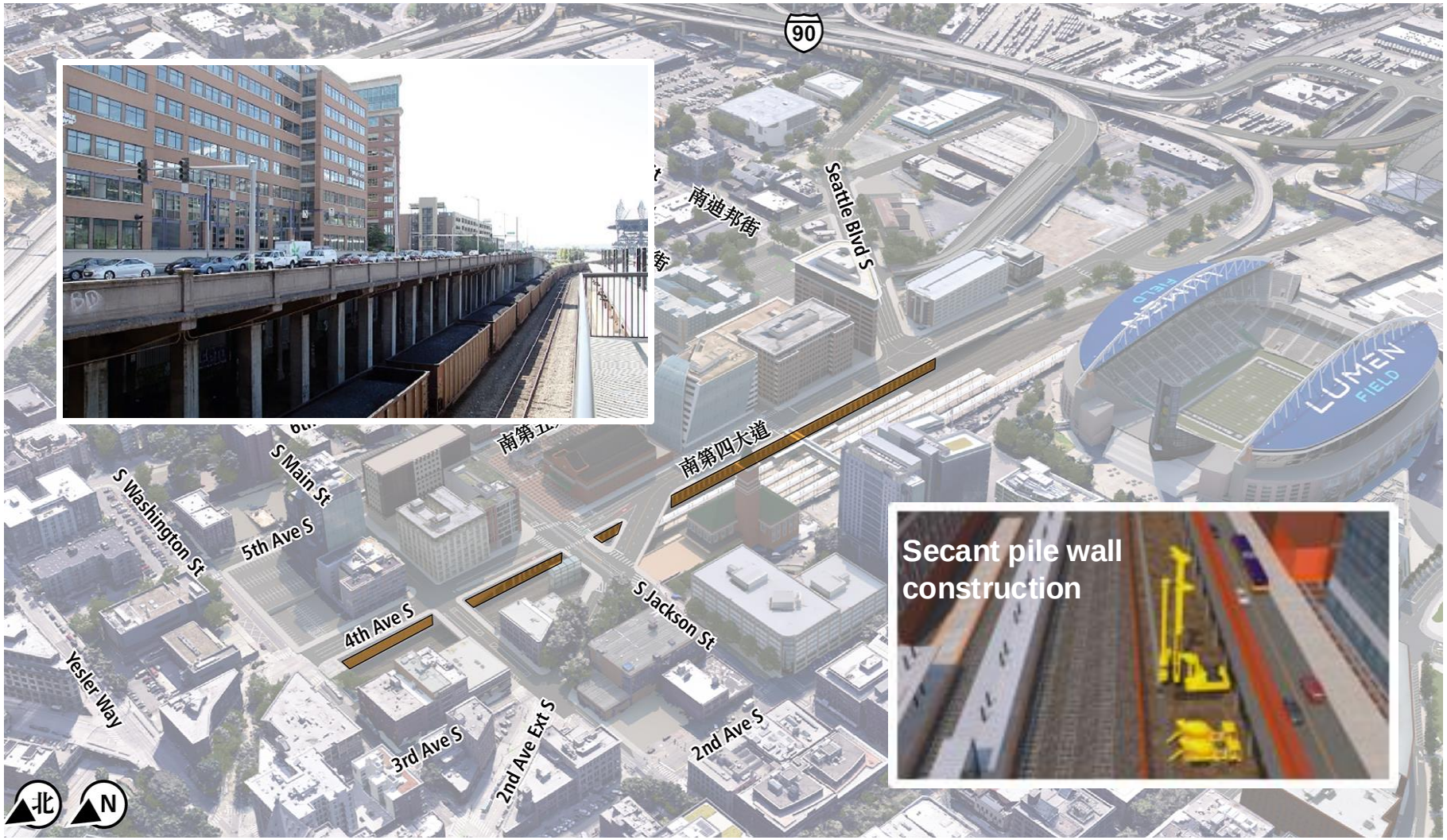
Appendix

4th Avenue Shallow alternative refinement process

WSBLE Further Studies (2022-2023)

BNSF Railway Proximity

- Construction approach modified to address BNSF concern about proximity of construction to active freight operations
- Secant walls rather than slurry walls used for construction next to BNSF
- Resulted in lengthening construction duration by one year
- Does not resolve all risks associated with construction next to BNSF



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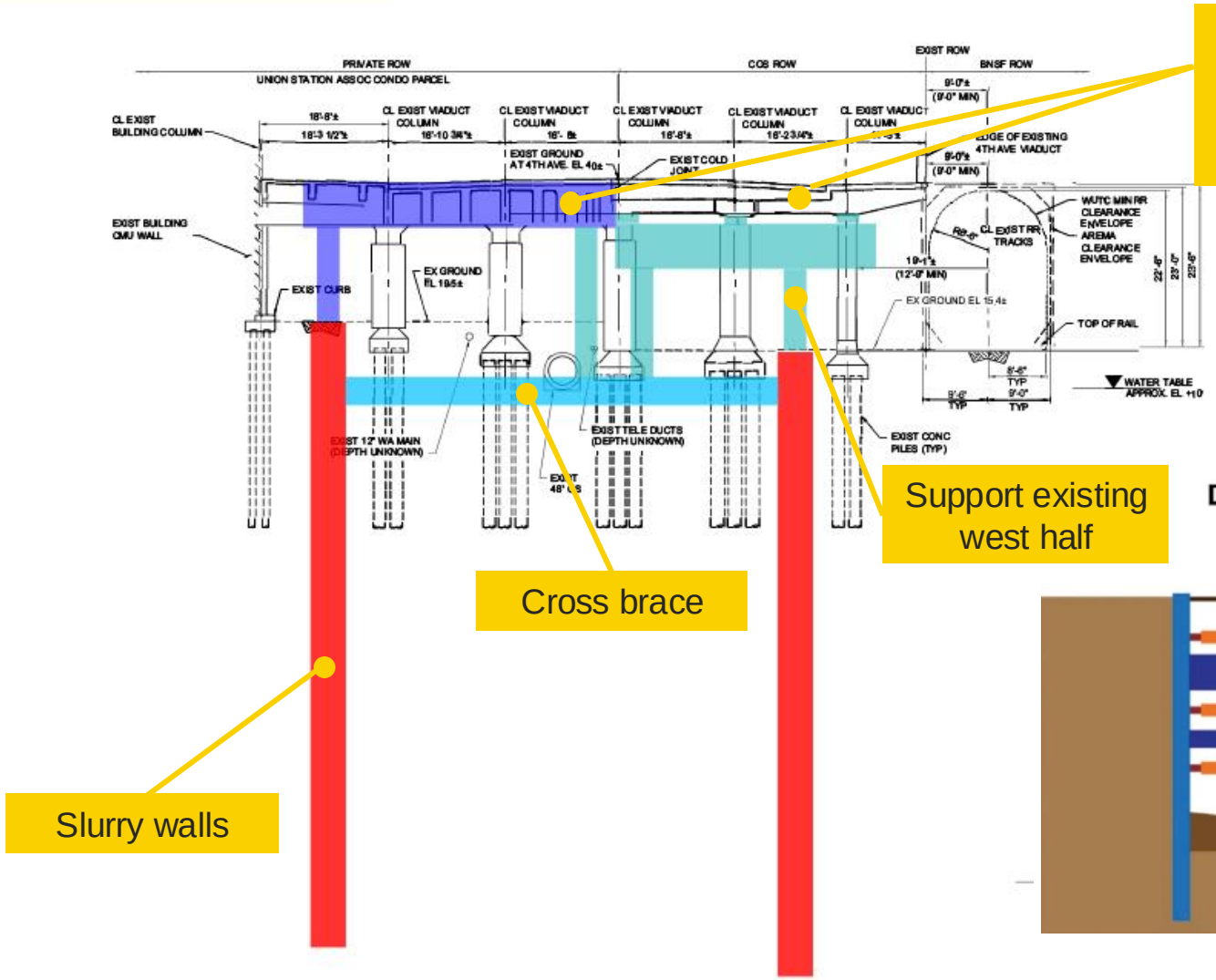
Independent consultant to the Board ideas

“Top down” construction with new permanent viaduct

- Permanent rather than temporary deck
- Reduces duration of traffic effects by one year
- ✓ Incorporated into design as part of further studies in late 2022 and early 2023



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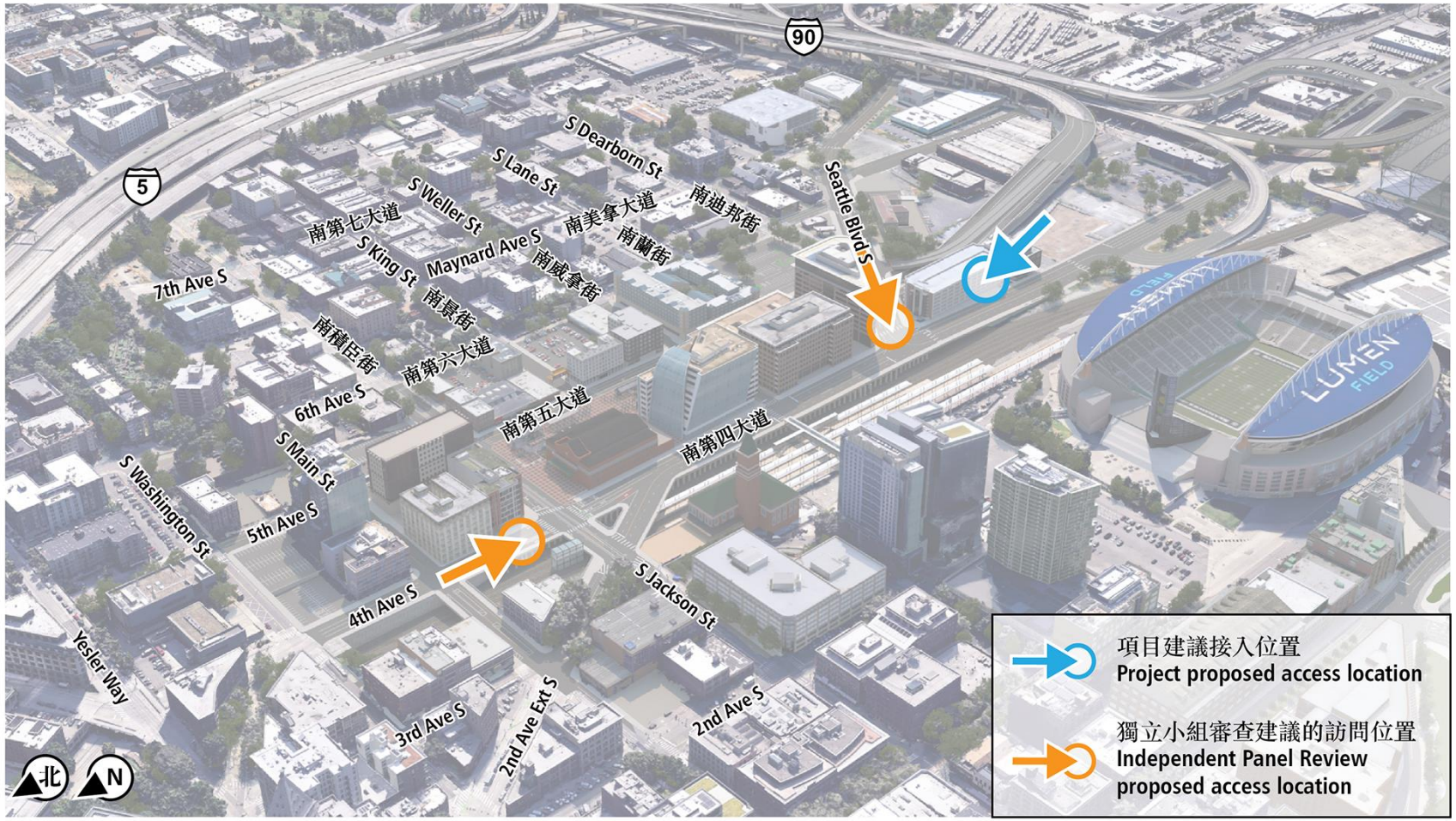
Independent Expert Panel

Multiple construction access locations

- Additional construction access location suggested by panel to reduce construction duration



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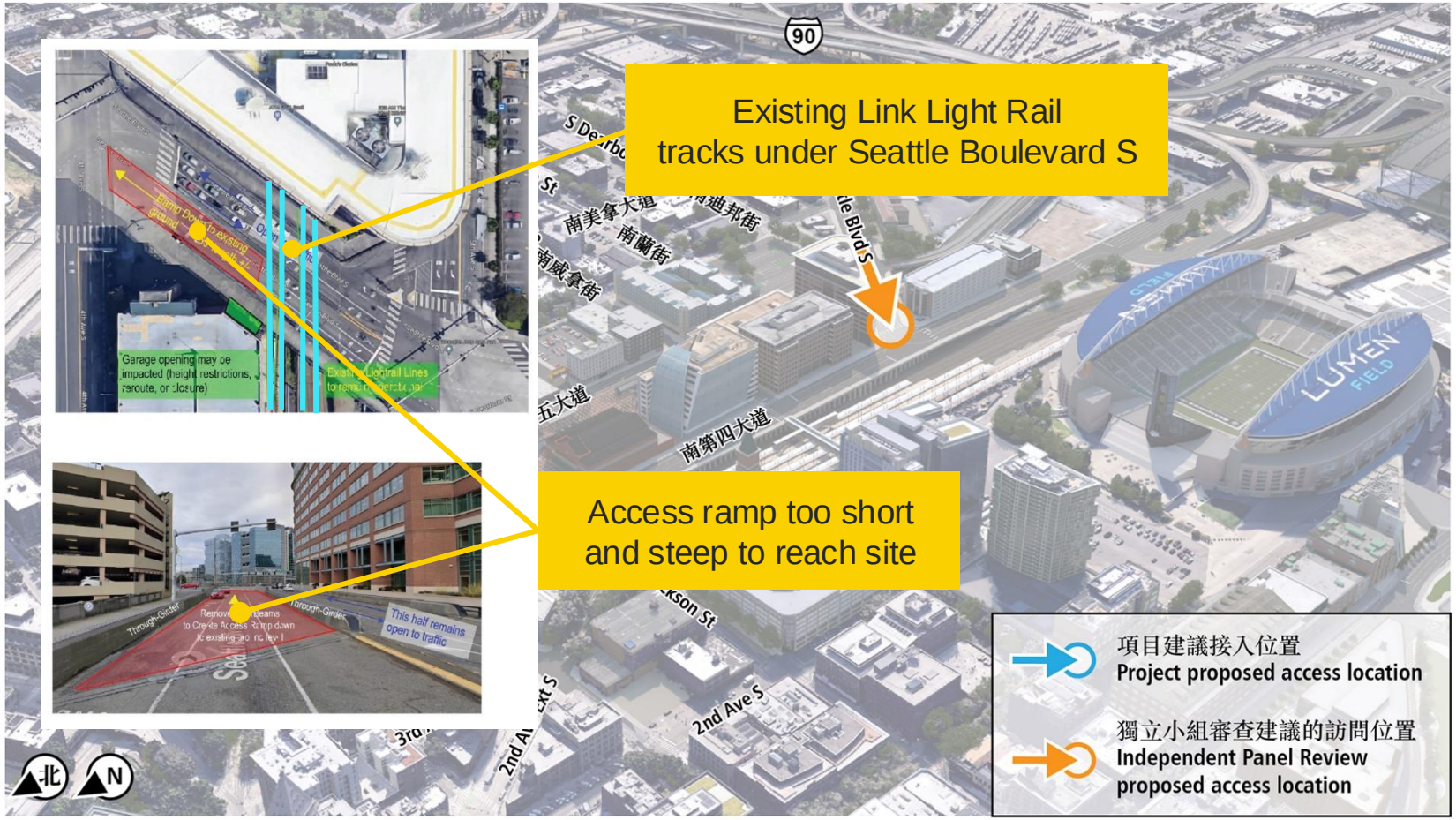
Independent Expert Panel

Multiple construction access locations

- Additional access location suggested at Seattle Boulevard
- Not enough space for ramp, too steep for construction equipment
- Not incorporated into design



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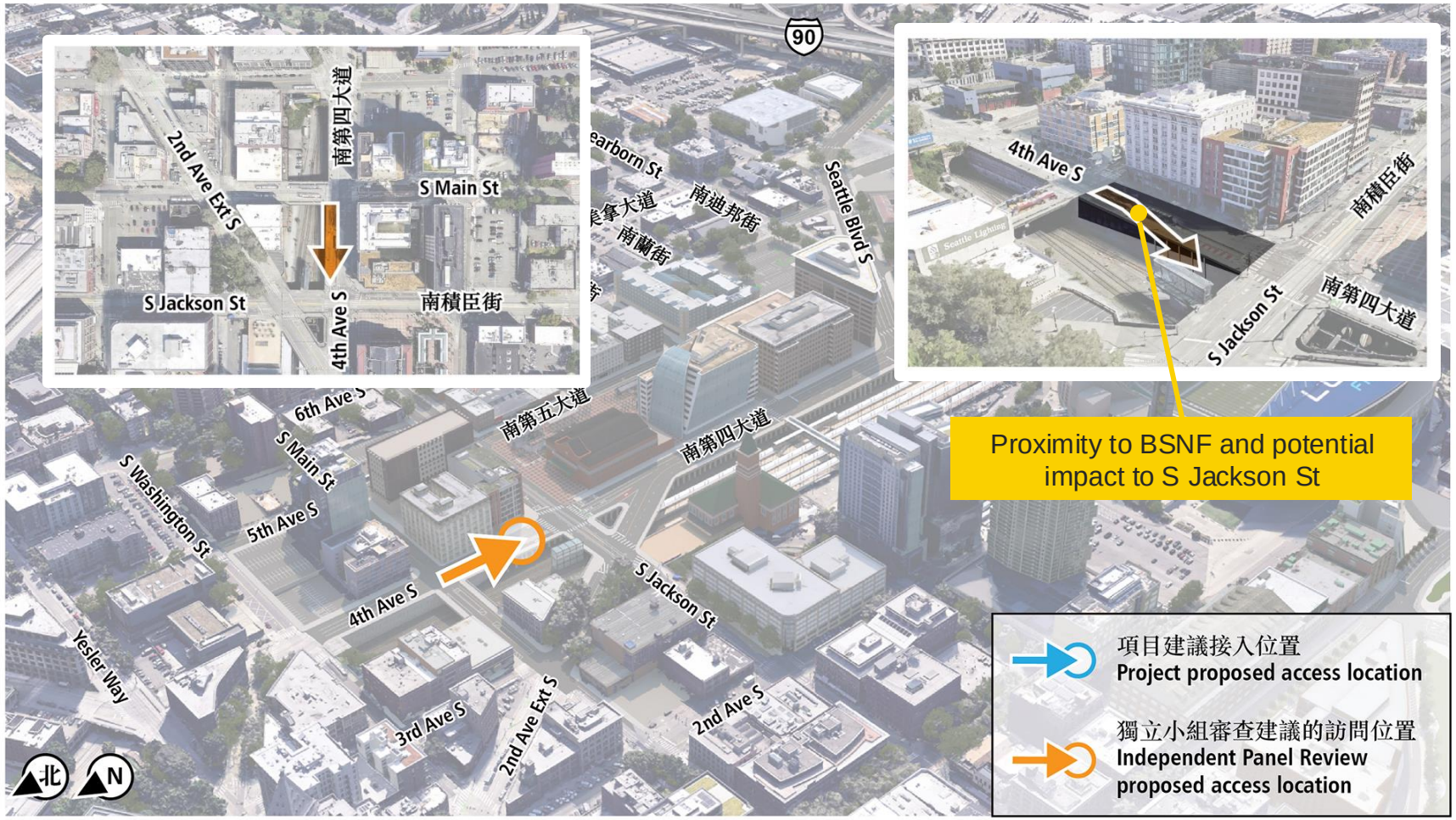
Independent Expert Panel

Multiple construction access locations

- Additional access location suggested at Main Street
- Proximity to BNSF railway, conflict with existing retaining wall, minimal available space
- Not incorporated into design

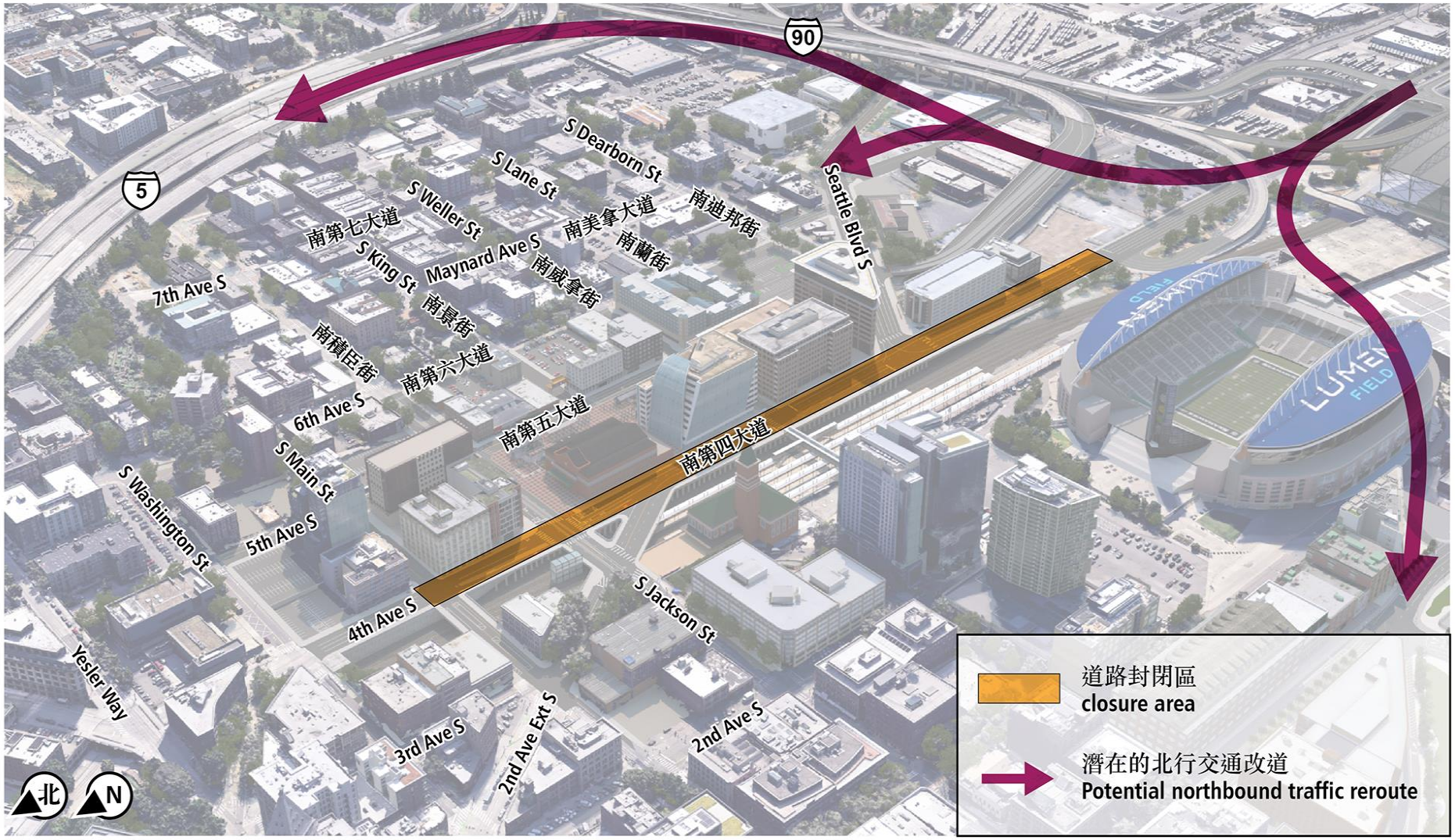


Diagrams are an approximate representation of station configuration and construction sequence based on conceptual design for illustrative purposes only.

Independent Expert Panel

Full traffic closure

- Proposed full closure of 4th Avenue for up to four years
- Could reduce overall construction duration by up to three and a half years
- Would likely result in substantially greater traffic and transit detours into CID and Pioneer Square neighborhoods
- Some traffic could detour to regional transportation facilities such as I-5 and SR 99
- Not incorporated into design

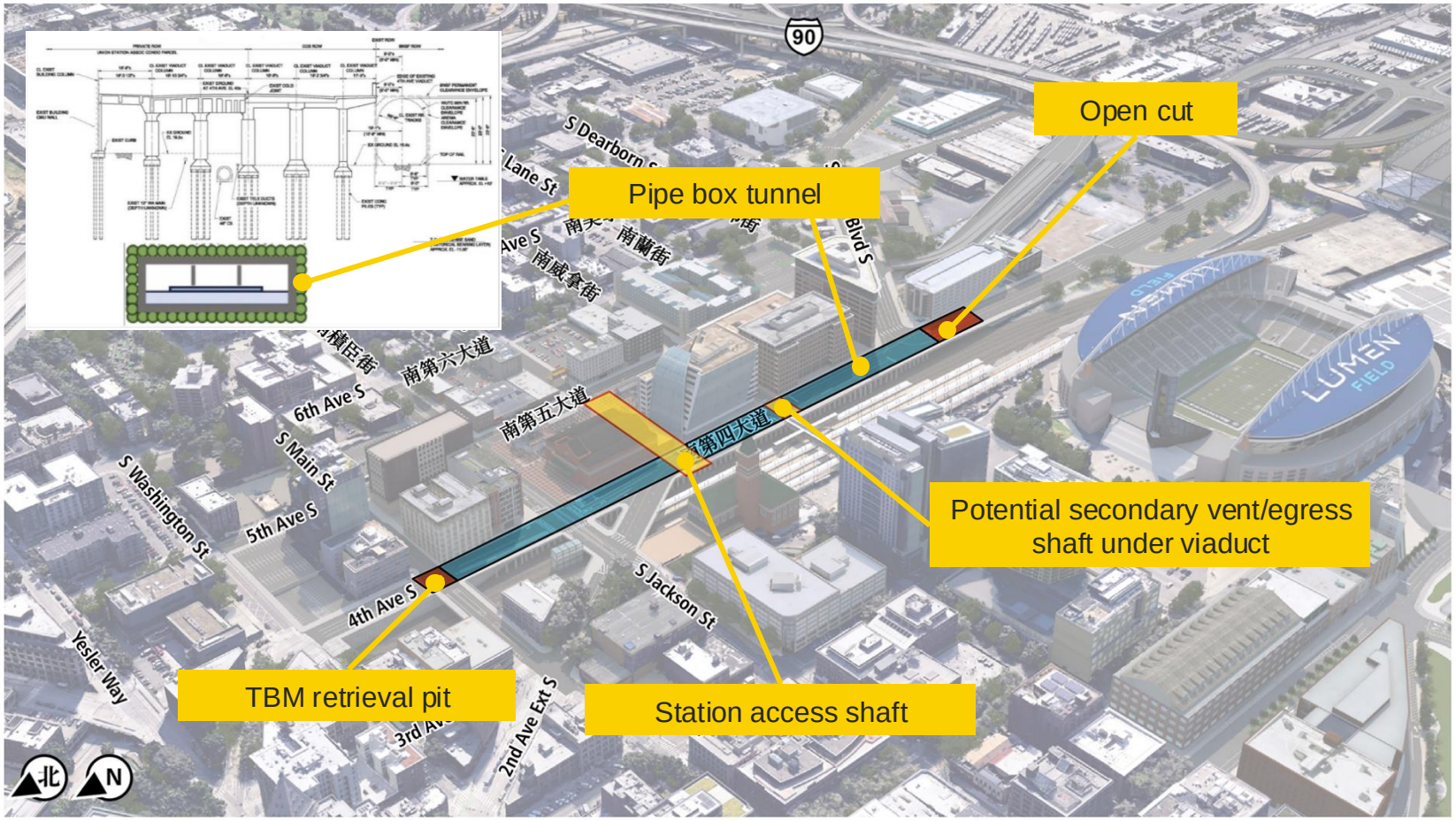


Diagrams are an approximate representation of station configuration and construction sequence based on conceptual design for illustrative purposes only.

Independent Expert Panel

Pipe box

- Never been done before:
  Length would exceed any achieved for this construction method to date, posing substantial risk
- Could potentially avoid need to demolish 4th Avenue viaduct and reduce construction duration by four years
- Station would need to be very deep and would be an elevator-only station
- At least some of viaduct would still need to be reconstructed to accommodate vertical construction shafts
- Not incorporated into design



Diagrams are an approximate representation of station configuration and construction sequence based on conceptual design for illustrative purposes only.

Summary

Summary

- The **Dearborn Street Preferred Alternative** is expected to take about **6-7 years to construct**, with a limited number of construction duration drivers (gas line, Seattle Blvd and 6th Avenue)
- The **5th Avenue Shallow Diagonal Alternative** is expected to take about **5-6 years to construct** with construction duration drivers including prioritizing minimizing business displacements, minimizing effects to historic buildings and avoiding effects to the Historic Chinatown Gate
- The **4th Avenue Shallow and Shallower Alternatives** are expected to take **10-12 years to construct** with construction drivers including very limited construction access, proximity to BNSF Railway, poor soil conditions, complex underground structures, and more
  - **Independent experts were consulted to develop ideas** to further reduce duration and impacts
  - Ideas were **reviewed and incorporated where shown to reduce duration and community impacts** (ideas incorporated into the Draft EIS design do not ultimately reduce the construction duration overall)
  - One idea, **full closure of 4th Avenue South**, **may reduce construction duration by up to 3.5 years**, but would result in increased community impact with **substantially greater traffic detours locally and regionally**
  - **Refinement ideas do not address** construction duration **risk related to proximity to BNSF**

Cost drivers and risk: 4th Avenue Shallow

- ***Construction duration risk:***
  - **Risk of increase to construction duration** (beyond 10 to 12 years) due to stringent safety requirements and other restrictions with construction next to **active BNSF Railway** mainline tracks; **delays could affect the entire BLE project schedule**
- ***Scope growth:***
  - **Additional scope to rebuild 4th Avenue viaduct**
- ***Construction complexity:***
  - Construction next to and over the **active BNSF Railway mainline tracks**
  - **Complex construction sequencing** due to lack of construction staging access while maintaining traffic and pedestrian access on 4th Avenue S in this constrained area
  - **Maintaining traffic and neighborhood access** during construction
- ***Market conditions:***
  - **Risk profile** of the job will **limit competition** and **increase the markup**
  - Bridge structure construction experience over a tunnel station and tunneling construction experience may affect competition

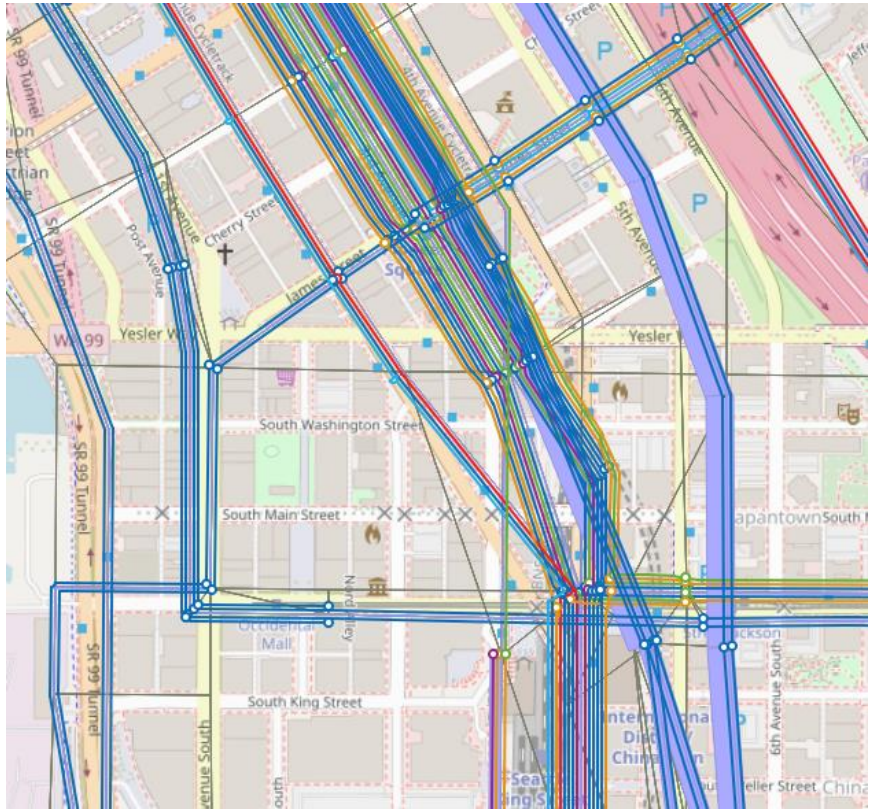
Maximizing regional and local connections

Maximizing regional and local connections

- **Developed ridership assessment** to understand difference for local and regional travel between alternatives
- **Assessed differences to regional and local access trips** (examined sample trips, updated trip times and assessed how trips might differ and who would experience those differences)
- **Developing pedestrian and transit access improvements** through South Downtown Hub and Ballard Link Extension planning process
- **Exploring station and transfer path refinements** to improve access and passenger experience
- **Upcoming: Developing wayfinding and signage recommendations** to improve system and station access legibility

Ridership Modeling Background

- Ridership modeling provides **potential scale and magnitude** of system and station usage
- High volume of transit choices in the Seattle core makes **modeling results highly sensitive to small changes**, such as station access times
- Modeling **does not predict individual behavior** (e.g., people choose the travel choice that makes sense for them based on many different factors)



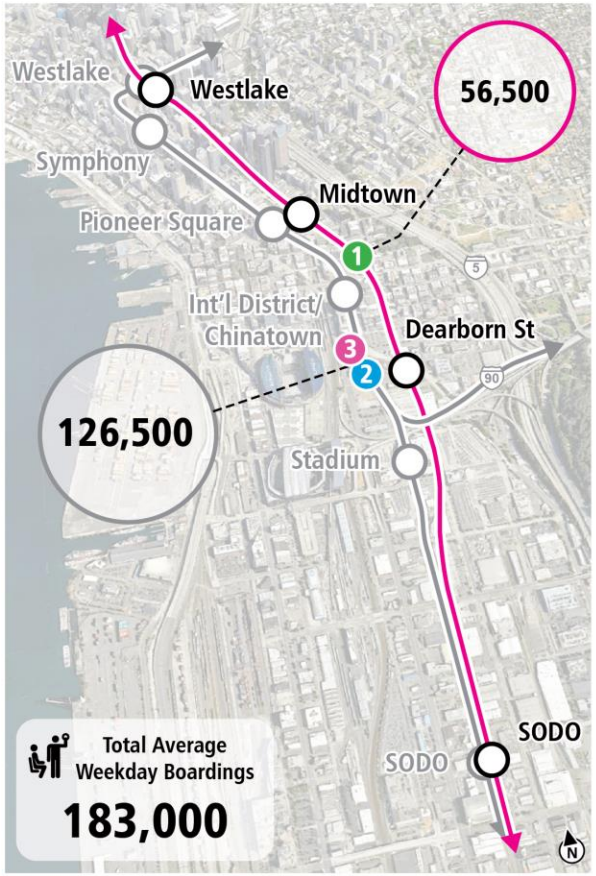
Example transit network in Ridership Model

SOUNDTRANSIT

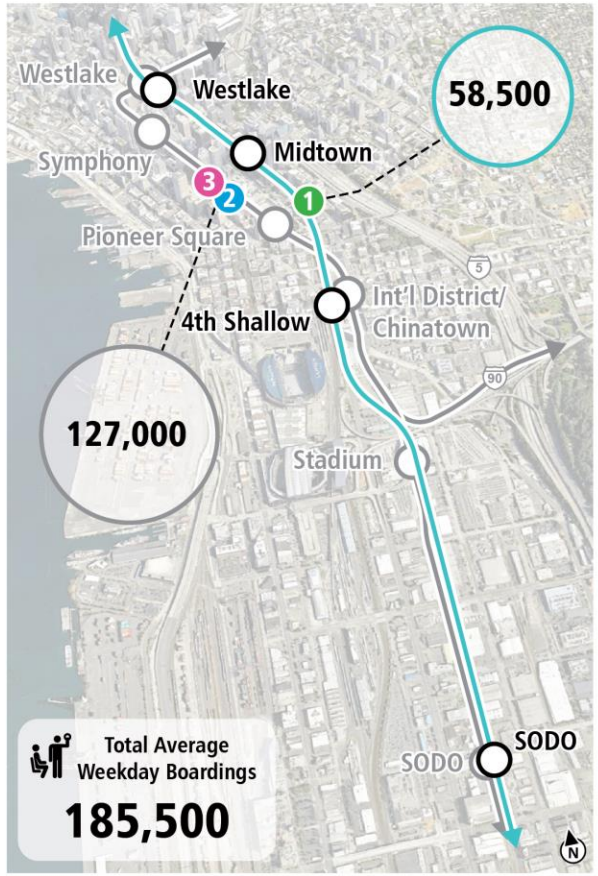
Ridership modeling results: 2046

Overall Link boardings between Westlake and SODO

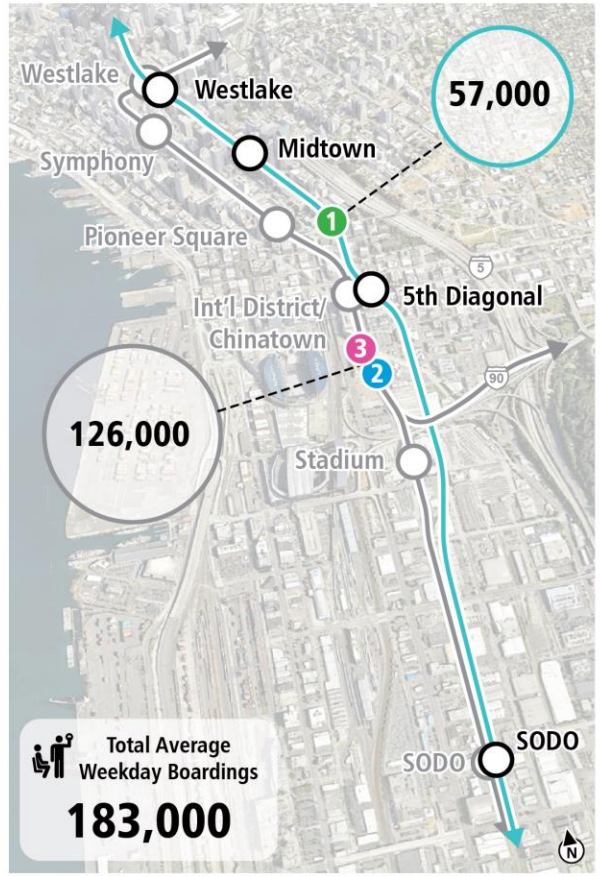
Similar between alternatives



Dearborn Street Preferred Alternative



4th Ave Shallow Alternative



5th Ave Shallow Diagonal Alternative

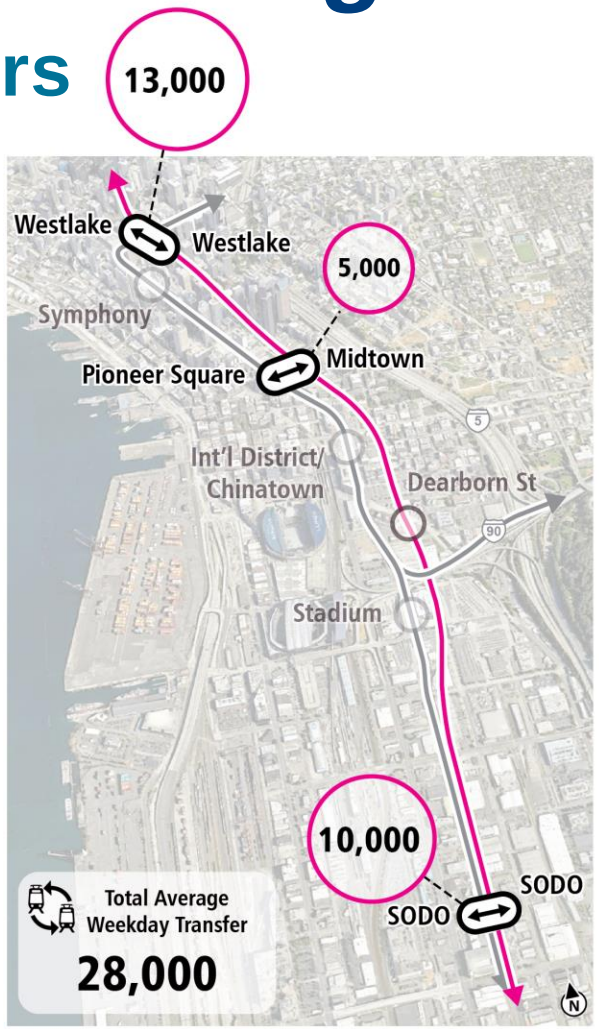
SOUNDTRANSIT

Ridership modeling results: 2046

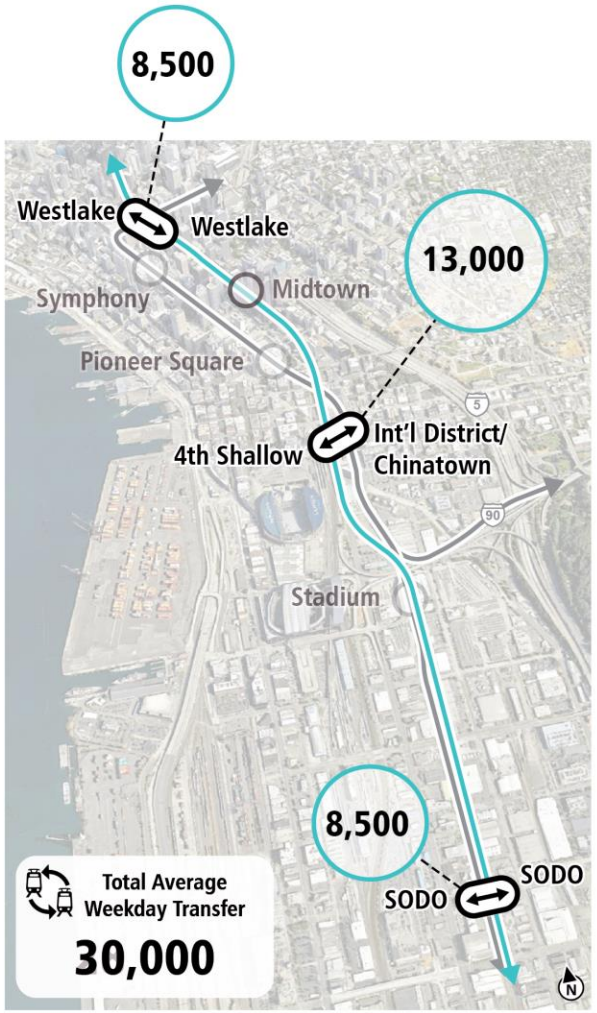
Link-Link transfers

Total average weekday transfers are similar between alternatives

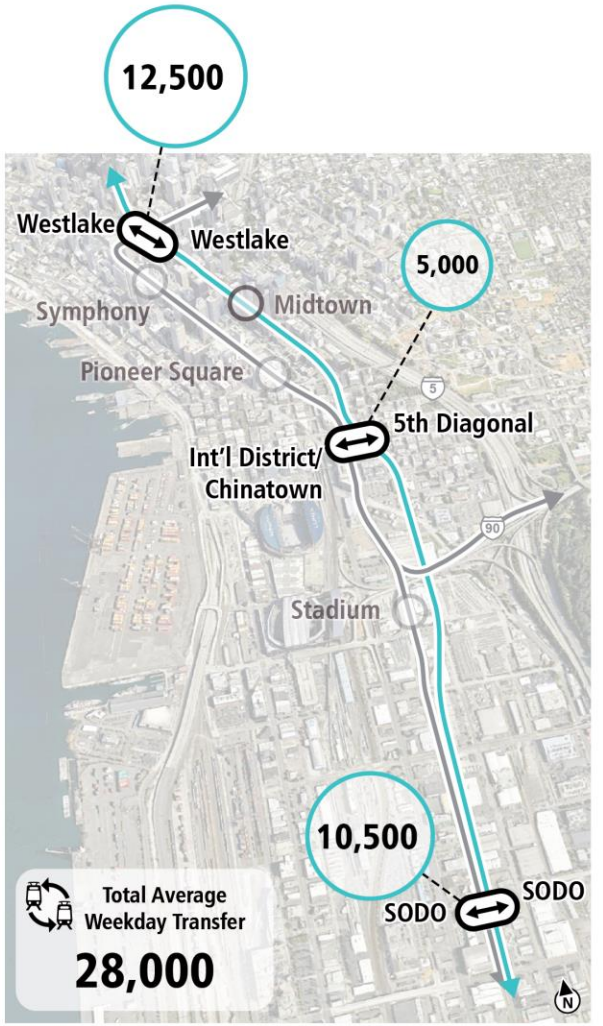
- More transfers at Westlake and SODO Stations with Dearborn Street Preferred and 5th Avenue Shallow Diagonal Alternatives
- More transfers at CID Station with 4th Avenue Shallow Alternative



Dearborn Street Preferred Alternative



4th Ave Shallow Alternative



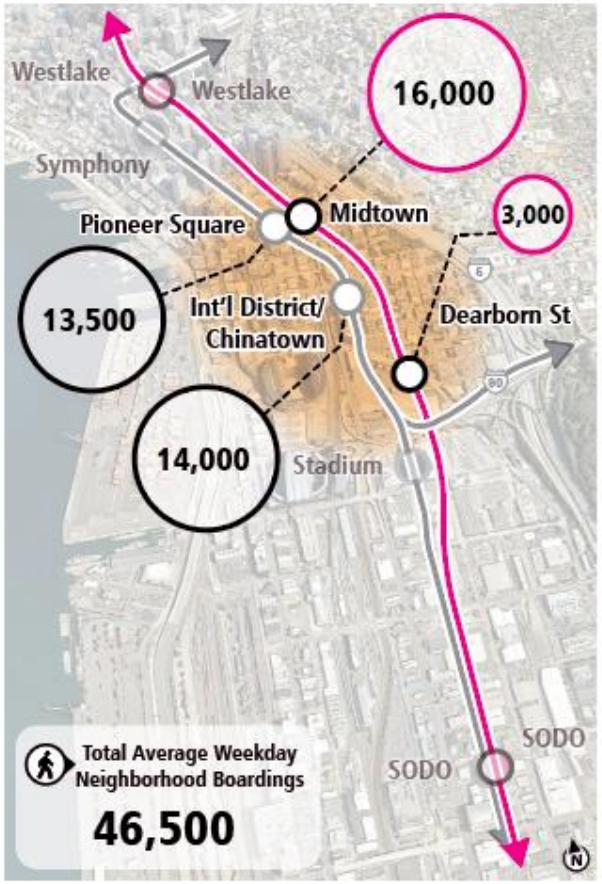
5th Ave Shallow Diagonal Alternative

SOUNDTRANSIT

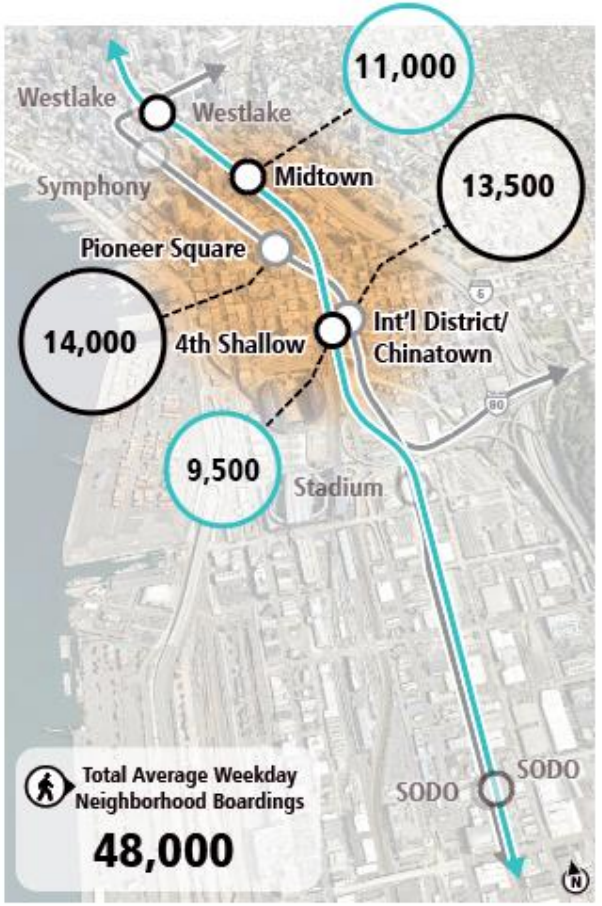
Ridership modeling results: 2046

Neighborhood boardings for CID and Midtown Stations

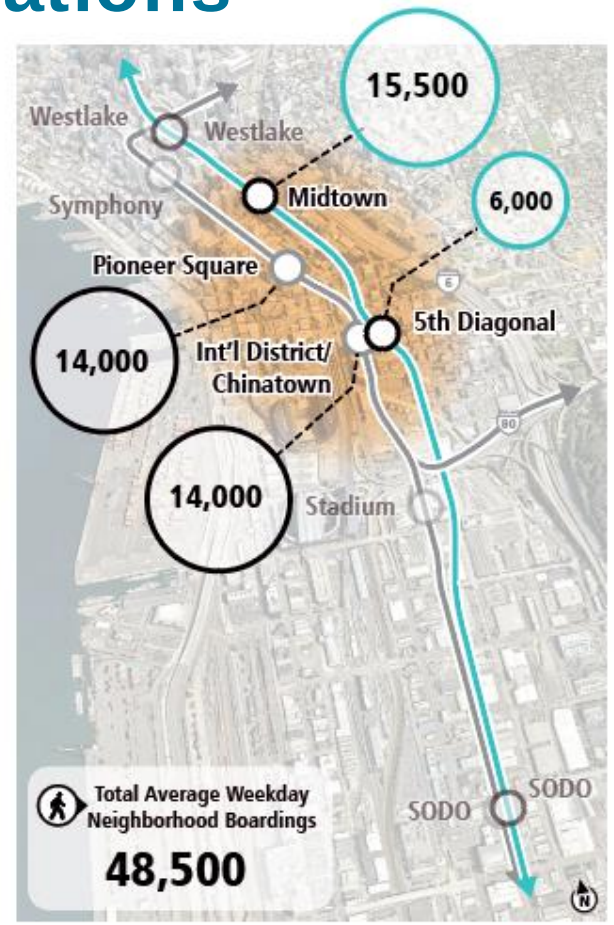
Similar between alternatives, with moderately higher boardings for 4th and 5th Avenue options
(likely due to a shift in where boardings occur in central business district)



Dearborn Street Preferred Alternative



4th Ave Shallow Alternative



5th Ave Shallow Diagonal Alternative

SOUNDTRANSIT

Regional and Local Travel Times

	Dearborn Street (Preferred)	4th Ave Shallow*	5th Ave Shallow (Diagonal)
Travel time between regional destinations (minutes):			
Hing Hay Park to SeaTac Airport	**45**	**44**	**43**
CID Library to SeaTac Airport	**47**	**53**	**52**
Danny Woo Garden to SeaTac Airport	**52**	**48**	**47**
Occidental Square to SeaTac Airport	**50**	**52**	**53**
Bellevue Transit Center to SeaTac Airport**	**70**	**65**	**66**
Kent (Sounder) to South Lake Union	**57**	**55**	**59**
SeaTac Airport to Harborview Medical Center	**54**	**54*** **	**54*** **
SeaTac Airport to Swedish Hospital	**63**	**59*** **	**59*** **

* Assumes 4th Avenue Shallow configuration in CID. Shallower configuration would save approximately one minute.
** Riders could also take STRIDE BRT from Bellevue Transit Center to SeaTac Airport in 44-49 minutes.
*** Instead of walking or taking a King County Metro bus from Midtown Station, riders could also get off at the future station serving CID and take the Seattle Streetcar to Harborview Medical Center (68-69 minutes total) or Swedish Hospital (70-72 minutes total)

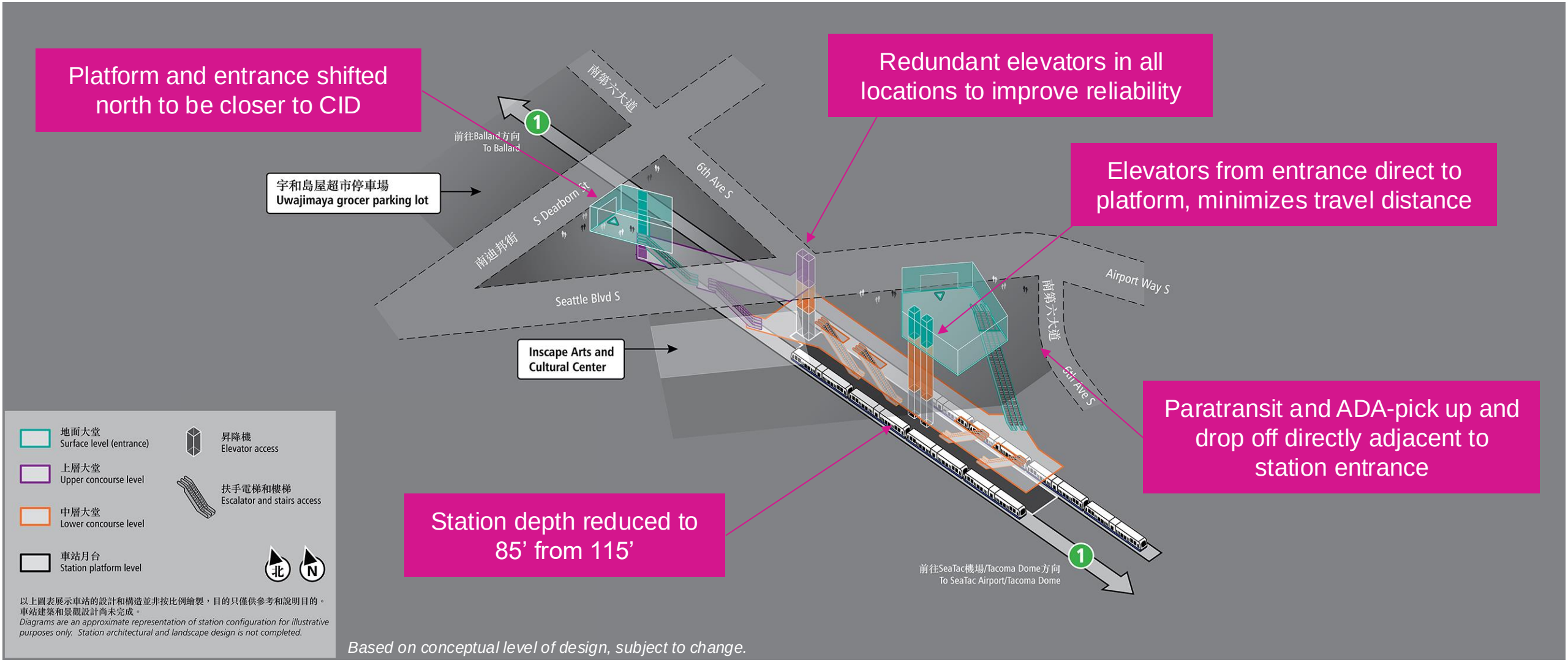
Walk time to nearest 1-Line station*:

0-5 min | 6-10 min | 11+ min

	Dearborn Street (Preferred)	4th Ave Shallow	5th Ave Shallow (Diagonal)
Hing Hay Park	4 min	3 min	2 min
Little Saigon	15 min	13 min	12 min
Yesler Terrace	9 min	13 min	12 min
Occidental Square	6 min	8 min	9 min
Lumen Field	6 min	4 min	7 min
T-Mobile Park	10 min	11 min	14 min
Central Library	7 min	2 min	2 min
Seattle City Hall	2 min	2 min	2 min
Harborview	8 min	9 min	9 min
Virginia Mason	13 min	8 min	8 min
Frye Art Museum	9 min	8 min	8 min
Sounder Station	6 min	2 min	4 min
Amtrak Station	7 min	2 min	5 min
Colman Dock	10 min	8 min	8 min

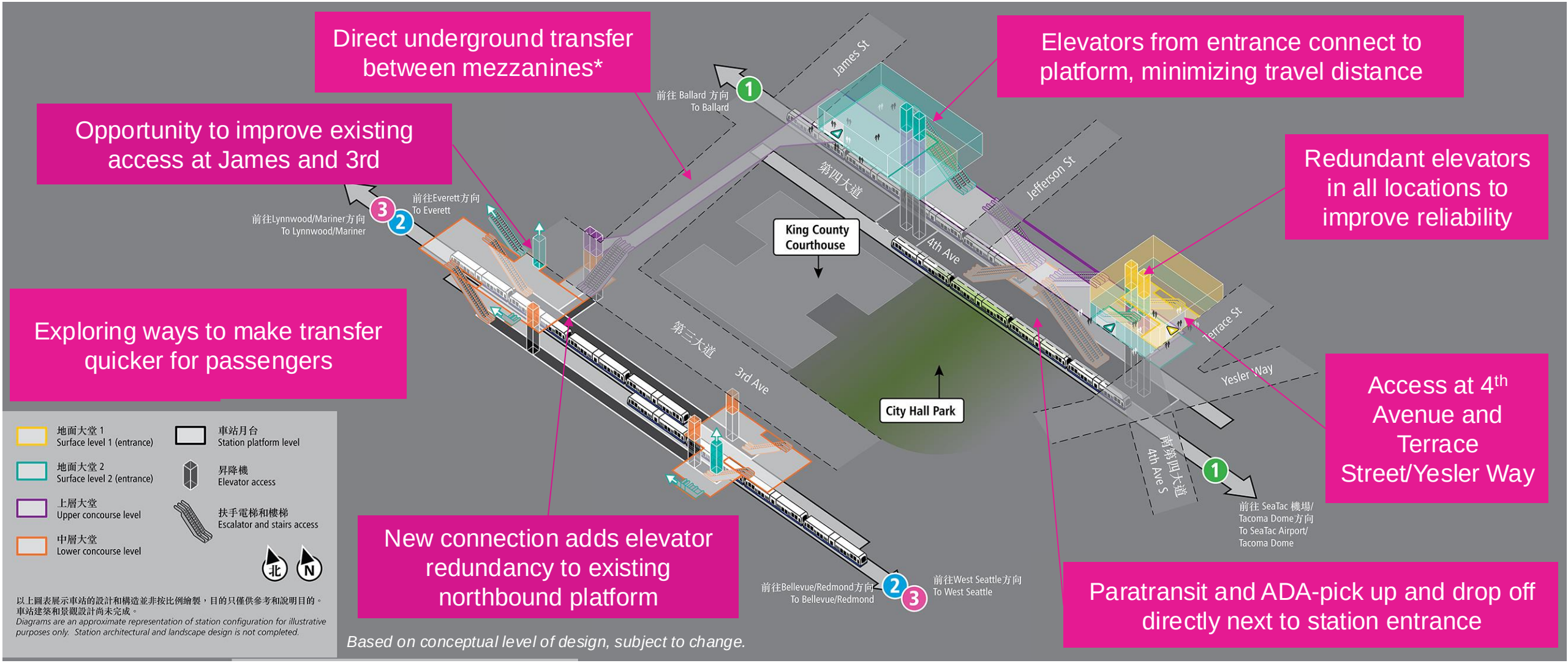
*Walk times are approximate based on an example walking route and do not account for all passengers' preferences. Walk time based on average walk speed of 4ft/sec. Includes walk to CID or Midtown stations.

Access in Stations CID Dearborn Street Station



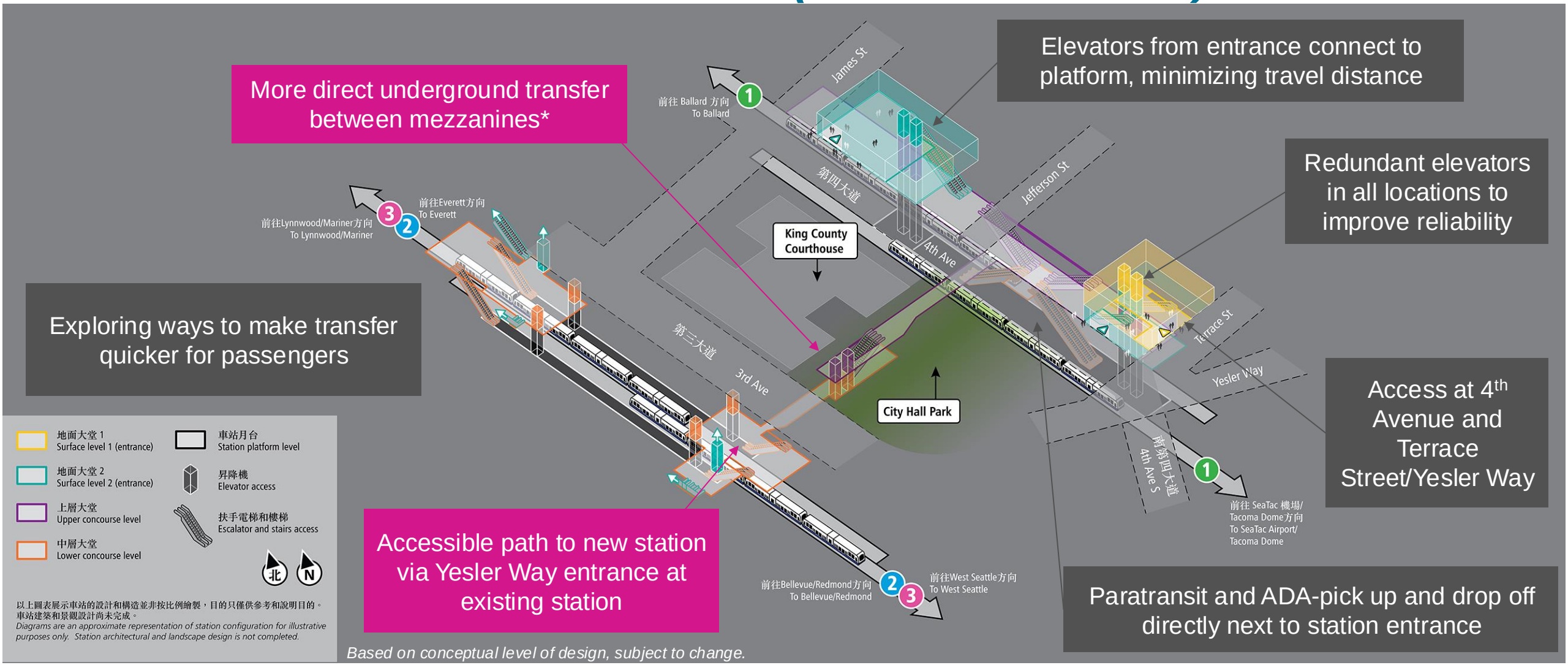
Access in Stations

Midtown James Street Station (James Tunnel)



Access in Stations

Midtown James Street Station (Jefferson Tunnel)



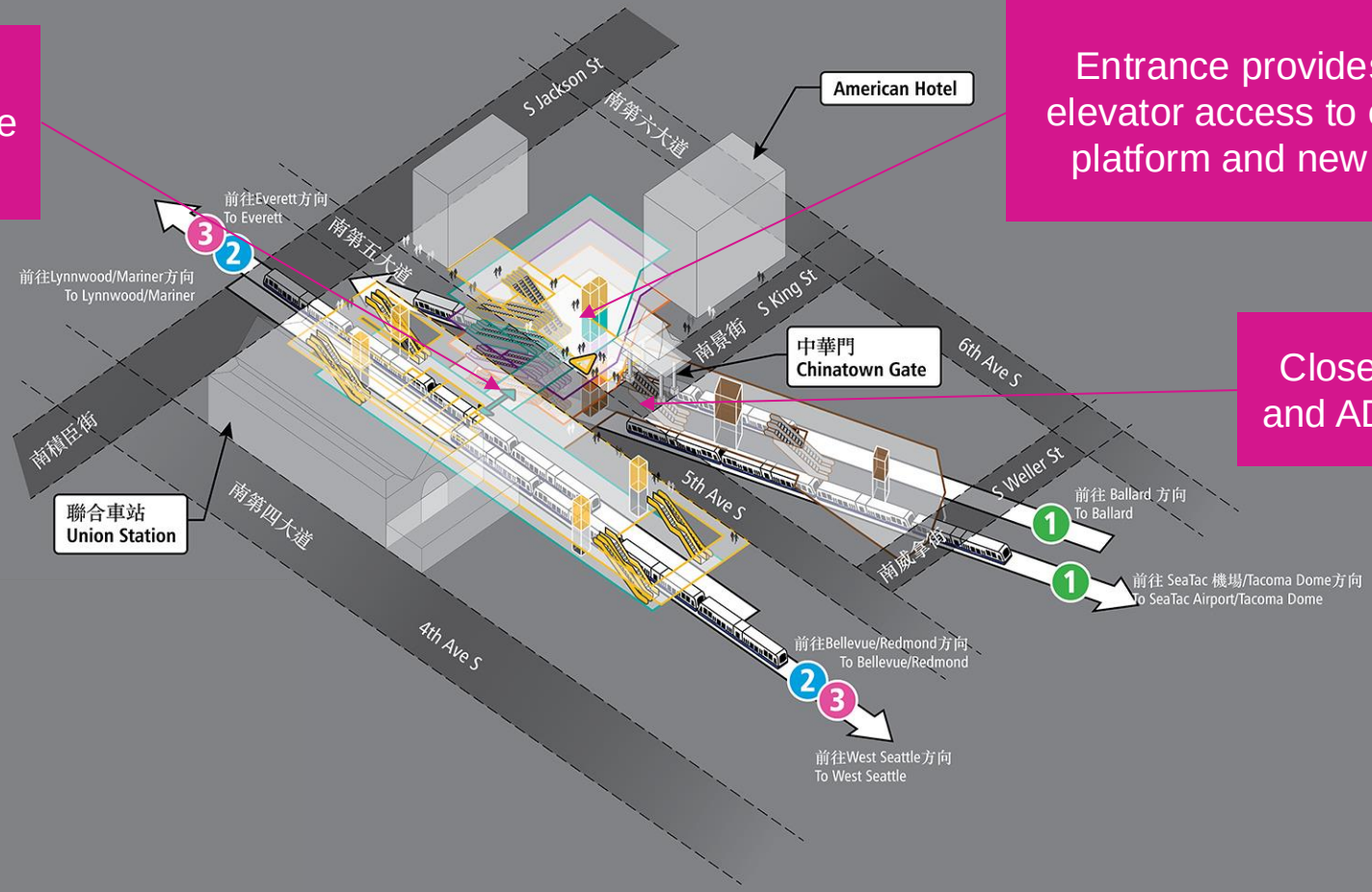
Based on conceptual level of design, subject to change.

Access in Stations CID 5th Avenue Shallow Diagonal

Close proximity for transfer between 1 Line and 2/3 Lines

Entrance provides direct redundant elevator access to existing northbound platform and new station concourse

Closer proximity paratransit and ADA-pick up and drop off



地面大堂 (出入口)
Surface level (entrance)

地下層 1
Basement level 1

地下層 2
Basement level 2

地下層 3
Basement level 3

地下大堂
Concourse level

車站月台
Station platform level

昇降機
Elevator access

扶手電梯和樓梯
Escalator and stairs access

北 N

以上圖表展示車站的設計和構造並非按比例繪製，目的只僅供參考和說明目的。車站建築和景觀設計尚未完成。

Diagrams are an approximate representation of station configuration for illustrative purposes only. Station architectural and landscape design is not completed.

Based on conceptual level of design, subject to change.

Access in Stations CID 4th Avenue Shallow