3/3/2022

15-O-22

AN ORDINANCE

Amending the Zoning Map to Rezone 1732-34, -40 Orrington Avenue From the D2 Downtown Retail Core District to the D3 Downtown Core Development District and Granting A Special Use Permit For a New Ten-Story Mixed Use Planned Development at 1732-34, -40 Orrington Avenue

WHEREAS, the City of Evanston is a home-rule municipality pursuant to Article VII of the Illinois Constitution of 1970; and

WHEREAS, as a home rule unit of government, the City has the authority to adopt ordinances and to promulgate rules and regulations that protect the public health, safety, and welfare of its residents; and

WHEREAS, Article VII, Section (6)a of the Illinois Constitution of 1970, which states that the "powers and functions of home rule units shall be construed liberally," was written "with the intention that home rule units be given the broadest powers possible" (*Scadron v. City of Des Plaines*, 153 Ill.2d 164); and

WHEREAS, it is a well-established proposition under all applicable case law that the power to regulate land use through zoning regulations is a legitimate means of promoting the public health, safety, and welfare; and

WHEREAS, Division 13 of the Illinois Municipal Code (65 ILCS 5/11-13-1, *et seq*.) grants each municipality the power to establish zoning regulations; and

WHEREAS, pursuant to its home rule authority and the Illinois Municipal Code, the City has adopted a set of zoning regulations, set forth in Title 6 of the Evanston City Code of 2012, as amended, ("the Zoning Ordinance"); and

WHEREAS, John Carlson of Trammell Crow Chicago Development, Inc. (the "Applicant,"), for the proposed development located at 1732-34, -40 Orrington Avenue, Evanston, Illinois (the "Subject Property"), legally described in Exhibit A, which is attached hereto and incorporated herein by reference, applied, pursuant to the provisions of the Zoning Ordinance, specifically Section 6-3-4, "Amendments", to amend the Zoning Map to move the Subject Property from the D2 Downtown Retail Core District to the D3 Downtown Core Development District, and also specifically Section 6-3-5, "Special Uses", Section 6-3-6 "Planned Developments", and Subsection 6-11-1-10, "Planned Developments" in Downtown Zoning Districts, to permit the construction and operation of a Planned Development with a ten (10) story mixed use building and accessory parking located at the Subject Property in the D3 Downtown Core Development District ("D3 District"); and

WHEREAS, the Applicant sought approval to construct a new ten (10) story, 149 foot 6 inch tall, mixed-use building with a floor area ratio of 7.0, approximately five thousand one hundred seventy (5,170) square feet of ground floor retail and approximately one hundred twenty-three thousand fifty (123,050) square feet of office/laboratory space and thirty-five (35) enclosed parking stalls located at the Subject Property; and

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WHEREAS, construction of the Planned Development, as proposed in the application, requires exception from the strict application of the Zoning Ordinance with regards to floor area ratio (FAR), ziggurat setback along Orrington Avenue, building height, and parking requirements; and

WHEREAS, pursuant to Subsection 6-3-6-5 of the Zoning Ordinance, the City Council may grant Site Development Allowances from the normal district regulations established in the Zoning Ordinance; and

WHEREAS, on January 26, 2022, in compliance with the provisions of the Illinois Open Meetings Act (5 ILCS 120/1 *et seq.*) and the Zoning Ordinance, the Land Use Commission held a public hearing, on an application for an amendment to the Zoning Map, cited in Section 6-7-2 of the Zoning Ordinance, to place the Subject Property from the D2 Downtown Retail Core District to the D3 Downtown Core Development District and an application for a Special Use Permit for a Planned Development with Site Development Allowances on the Subject Property, case no. 21PLND-0090, heard testimony and public comment and made written minutes, findings, and recommendations; and

WHEREAS, the Land Use Commission's written findings state that the application for the proposed amendment to the Zoning Map meets applicable standards set forth for Amendments in Subsection 6-3-4-5 of the Zoning Ordinance; and

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WHEREAS, the Land Use Commission's written findings also state that the application for a Special Use Permit for a Planned Development meets applicable standards set forth for Special Uses in Subsection 6-3-5-10 of the Zoning Ordinance and Planned Development in the D3 Downtown Core Development District per Subsections 6-3-6-9 and 6-11-1-10 of the Zoning Ordinance; and

WHEREAS, on January 26, 2022, the Land Use Commission recommended approval of the application for an amendment to the Zoning Map and of the application for Special Use Permit for a Planned Development with Site Development Allowances for the Subject Property; and

WHEREAS, at its meeting of February 28, 2022, the Planning and Development Committee of the City Council held a meeting, in compliance with the provisions of the Open Meetings Act and the Zoning Ordinance, received input from the public, carefully considered and reviewed the findings and recommendation of approval of the Land Use Commission in case no. 21PLND-0090 and recommended City Council approval thereof; and

WHEREAS, at its meetings of February 28, 2022, and March 14, 2022, held in compliance with the Open Meetings Act and the Zoning Ordinance, the City Council considered the recommendations of the Planning and Development Committee, received additional public comment, made certain findings, and adopted said recommendations; and

WHEREAS, it is well-settled law that the legislative judgment of the City Council must be considered presumptively valid (see *Glenview State Bank v. Village of Deerfield,* 213 Ill.App.3d 747) and is not subject to courtroom fact-finding (see *National Paint & Coating Ass'n v. City of Chicago*, 45 F.3d 1124),

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF EVANSTON, COOK COUNTY, ILLINOIS, THAT:

SECTION 1: The foregoing recitals are found as fact and incorporated herein by reference.

SECTION 2: The City Council hereby amends the Zoning Map to remove those properties with the addresses and PINs listed in Exhibit B and identified in Exhibit C, both attached hereto and incorporated herein by reference, from the D2 Downtown Retail Core District and place them within the D3 Downtown Core Development District.

SECTION 3: Pursuant to the terms and conditions of this ordinance, the City Council hereby grants the Special Use Permit for a Planned Development applied for in case 21PLND-0090, to allow the construction and operation of a new ten (10) story, 149 foot 6 inch tall, mixed-use building with a floor area ratio of 7.0, approximately five thousand one hundred seventy (5,170) square feet of ground-floor retail and approximately one hundred twenty-three thousand fifty (123,050) square feet of office/laboratory space and thirty-five (35) enclosed parking stalls on the Subject Property.

SECTION 4: The City Council hereby grants the following Site Development Allowances:

(A) Floor Area Ratio (FAR): A Site Development Allowance is hereby granted for a FAR of 7.0, whereas Subsection 6-11-4-6 of the Zoning Ordinance allows a FAR of 4.5 in the D3 District with Subsection 6-11-1-10(C)(2) allowing for a FAR of up to 8.0 to be requested.

(B) Building Height: A Site Development Allowance is hereby granted for an approximately one hundred forty-nine and one half (149.5) foot building height, whereas Subsection 6-11-4-8 of the Zoning Ordinance allows a maximum of eighty-five (85) feet in the D3 District with Subsection 6-11-1-10(C)(1) allowing a height of up to one hundred seventy (170) feet to be requested.

(C) Ziggurat Setback: A Site Development Allowance is hereby granted for a ziggurat setback ranging from 6.4 feet to 11 feet at the building height of 32 feet above grade where a minimum of 40 feet at the building height of 24 to 42 feet above grade is required along Orrington Avenue pursuant to Subsection 6-11-1-4 of the Zoning Ordinance.

(D) Number of Parking Spaces: A Site Development Allowance is hereby granted for thirty-five (35) on-site parking stalls where a minimum of two hundred thirteen (213) is required pursuant to Table B of Subsection 6-16-3-5 of the Zoning Ordinance.

SECTION 5: Pursuant to Subsection 6-3-8-14 of the Code, the City Council hereby imposes the following conditions on the Special Use Permit granted hereby, violation of any of which shall constitute grounds for penalties or revocation thereof pursuant to Subsections 6-3-10-5 and 6-3-10-6 of the Zoning Ordinance:

A. Compliance with Applicable Requirements: The Applicant shall develop and operate the Planned Development authorized by the terms of this ordinance in substantial compliance with the following: the terms of this ordinance; the Development Plan in Exhibit D, attached hereto and incorporated herein by reference; all applicable City Code requirements; the Applicant's testimony and

representations to the Design and Project Review Committee, the Land Use Commission, the P&D Committee, and the City Council.

B. Construction Management Plan: The Applicant shall sign and agree to a Construction Management Plan (CMP) with the City of Evanston prior to issuance of the building permit. The CMP must include but is not limited to the following: water and sewer utility connections, construction staging plan, on-street and on-site construction parking restrictions, hours of operation, a plan including cross-sections showing pedestrian access around the site with the use of curb ramps, signage and/or striping, if necessary, foundation survey of surrounding structures including weekly reporting of seismographs for the duration of construction, submittal of environmental testing report prior to construction, visibility diagram for all construction site access points, a proposed schedule for street opening for utility connections with cross-section details, and project updates via monthly newsletter and project website.

C. Construction Schedule: Pursuant to Subsection 6-10-1-9(A)(4) of the Zoning Ordinance, no special use permit for a planned development shall be valid for a period longer than one (1) year unless a building permit is issued and construction is actually begun within that period and is diligently pursued to completion. The City Council may, however, for good cause shown, extend the one (1) year period for such time as it shall determine, without further hearing before the Land Use Commission. Pursuant to Subsection 6-10-1-9(A)(3), each planned development shall be completed within two (2) years of the issuance of the building permit for the Planned Development.

D. Multi-Modal Transportation: The Applicant agrees to the following with regard to the City's multi-modal transportation network:

1. Install all bicycle parking on the interior and the exterior of the building in compliance with the Association of Pedestrian and Bicycle Professionals (APBP) Guidelines;
2. Install showers in the locker room amenity on the tenth floor of the proposed building;
3. Maintain a pedestrian walkway along the proposed building and between the building and any patio area or outdoor dining café;
4. Construct the sidewalk along Orrington Avenue through the alley without a change in slope;
5. Contribute at least, but no more than, $5,000 to the City Divvy fund for the installation of a lightweight Divvy station;
6. Contribute no less than $100,000 to the City's public transit improvement fund; and

7. Install a Transit Tracker Board or similar system in the proposed building (TV and software).

E. Green Building Ordinance: The Applicant agrees to comply with the City of Evanston Green Building Ordinance and obtain a LEED Silver Certification Rating or equivalent certification rating deemed acceptable by the Building Official.

F. Affordable Housing Fund Contribution: The Applicant agrees to contribute no less than $310,000 to the City's Affordable Housing Fund for the public benefit of creating affordable housing, reducing homelessness, and other goals and objectives which support the purpose and intent of the creation of said fund, as approved by the City Council in their annual budget.

G. Waste Management Plan: The Applicant agrees to provide a waste management plan which includes recycling, composting, and laboratory materials.

H. Public Space Improvements: The Applicant agrees to contribute $50,000 toward the street furniture, activities, and other aesthetic improvements in downtown Evanston to enhance the public realm.

I. Bird-Friendly Measures: The Applicant agrees to provide the exhibited Bird-Friendly in the final design and construction of the proposed building and continue to involve Bird-Friendly Evanston in design finalization.

J. Off-Site Parking: Prior to issuance of a building permit, the Applicant shall execute a long-term parking lease agreement with the City of Evanston to lease a minimum of 100 spaces from either the 525 Church Street parking garage, or in agreement with the Parking Division Manager and in accordance with Section 6-16-2-1 of the Evanston Zoning Ordinance, any City-owned parking garage within 1,000 feet of the Subject Property. The standard current monthly parking fee shall be that of the City-owned garage or garages from which the total of no less than 100 parking stalls are leased. The lease of 30 parking spaces would be initiated upon issuance of a Temporary Certificate of Occupancy (TCO) for the first tenant. The remaining leased spaces would be leased by the Applicant as the building is occupied and pro-rated by a percentage gross floor area occupied (e.g., if the building is 50% occupied, the applicant would be required to lease 75 spaces). Upon the building reaching stabilization, (i.e. 95% occupancy), the Applicant would be required to lease the full 100 spaces regardless of the building occupancy. The parking spaces shall be leased at market rate without fixed pricing and be subject to increases annually, and such increases shall not exceed the increases applied to other public parking spaces in the City-owned garage or garages. For a period of 60 months, starting from the issuance of the

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TCO, the Applicant must provide annually to the City parking data detailing how many parking spaces (leased from the City and provided within the building) are utilized by the building tenants. The data must be provided by January 31st of each year following the issuance of a TCO. At the end of the 36th month following the building reaching stabilization (as defined above) but no earlier than 36 months following the issuance of the TCO, the Applicant shall have the right to amend the parking lease agreement to match the highest number of vehicles cumulatively leased within the Church Street parking garage and/or any combination of City-owned garages per Section 6-16-2-1 of the Zoning Ordinance.

K. Substantive Changes: The Applicant agrees that any substantive changes in the use or the building on the Subject Property must be approved as an amendment to this Planned Development by Subsection 6-3-6-12 of the Zoning Ordinance.

L. Loading Stall Use: The Applicant agrees to prohibit deliveries to and pick up from the loading stall during the hours of 7:00 am to 9:00 am and 4:00 pm to 6:00 pm, Monday through Friday.

M. Burial of Proximate Above-Ground Utilities: The Applicant agrees to bury all existing above-ground utilities in the alley located to the south of the Subject Property in conjunction with the associated alley reconstruction.

N. Alley Reconstruction: The Applicant shall reconstruct the entirety of the public alley to the south of the Subject Property from Sherman Avenue to Orrington Avenue located to the south of the subject properties;

O. Prohibition of Tax Exemption: The Applicant agrees to record a covenant against the subject properties reflecting the following terms in a form acceptable to and enforceable by the City:
    1. upon the completion of the proposed development, the applicant and any successors, owners, or operators, shall not petition Cook County or the State of Illinois for exemption from obligation in whole or in part real estate taxes;
    2. in the event a change in law exempts the applicant from payment of real estate taxes on the basis of not-for-profit status, the applicant shall make annual payments in lieu of real estate taxes only to the City of Evanston, School District 65 and Evanston Township High School District 202 in an amount equal to the real estate taxes that the applicant would pay only to such taxing district if the applicant were not then so treated as an exempt not-for-profit; and
    3. release from any and all provisions of said covenant shall require written approval by two-thirds (⅔) of Councilmembers elected to the City Council.

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P. Recordation: Pursuant to Subsection 6-3-6-10 of the Zoning Ordinance, the Applicant shall, at its cost, record a certified copy of this ordinance, including all exhibits attached hereto, with the Cook County Recorder of Deeds, and provide proof of such recordation to the City, before the City may issue any permits pursuant to the Planned Development authorized by the terms of this ordinance.

SECTION 6: If any provision of this ordinance or application thereof to any person or circumstance is held unconstitutional or otherwise invalid, such invalidity shall not affect other provisions or applications of this ordinance that can be given effect without the invalid application or provision, and each invalid provision or invalid application of this ordinance is severable.

SECTION 7: This ordinance shall be in full force and effect from and after its passage, approval and publication in the manner provided by law.

SECTION 8: The findings and recitals contained herein are declared to be prima facie evidence of the law of the City and shall be received in evidence as provided by the Illinois Compiled Statutes and the courts of the State of Illinois.

Introduced: March 03, 2022

Adopted: March 14, 2022

Approved:

3/24, 2022

Daniel Biss

Daniel Biss, Mayor

Attest:

Stephanie Neubauer

Approved as to form:

Nicholas E. Cummings

Nicholas E. Cummings, Corporation

Stephanie Mendoza, City Clerk Counsel

EXHIBIT A

LEGAL DESCRIPTION

Parcel 1: The east 50 feet of lot 12 in block 16 in the village (now city) of Evanston in the southeast ¼ of the northwest ¼ of section 18, township 41 north, range 14 east of the third principal meridian, in Cook County, Illinois.

Also, Parcel 2: Part of lot 1 in block 16 in village (now city) of Evanston in section 18, township 41 north, range 14 east of the third principal meridian, as described as follows: commencing at a point on the easterly line of said lot 1, 81 feet northeasterly of the southeast corner of said lot; running thence northeasterly on said easterly line, 77 feet 9 5/8 inches to the northeast corner of said lot 1; running thence westerly on the north line of said lot 1, 118 feet 7 ½ inches, more or less to the northwest corner of said lot 1; running thence south on the west line of said lot, 51 feet 3 inches to a point on said west line 99 feet north of the southwest corner of said lot; running thence southeasterly 96 feet 7 inches more or less, to the point of beginning, Cook County, Illinois.

Also, part of lot 1 in block 16 in village (now city) of Evanston in section 18, township 41 north, range 14 east of the third principal meridian, described as follows: commencing at a point on the easterly line of said lot 1, 49 feet northerly of the southeast corner of said lot, thence running northeasterly on said east line 32 feet; thence northwesterly 96 feet 7 inches, more or less, to a point on the west line of said lot, 99 feet north of the southwest corner of said lot, running thence south on said west line, 32 feet; thence southeasterly 85 feet 7 ½ inches, to the point of beginning in Cook County, Illinois.

That part of lot 1 in block 16 in Evanston, described as follows: commencing at the southeasterly corner of said lot 1; thence northeasterly along the easterly line 49 feet; thence northwesterly to a point in the west line 67 feet north of the southwest corner of said lot; thence southerly along the westerly line 67 feet to the southwest corner of said lot; thence east along the south line 70.38 feet to the place of beginning, in Cook County, Illinois.

PINs: 11-18-127-012-0000, 11-18-127-019-0000

Commonly Known As: 1732-34, -40 Orrington Avenue

EXHIBIT B

Addresses and PINs of Properties Removed from the D2 Downtown Retail Core District and Placed Within D3 Downtown Core Development District

PINs: 11-18-127-012-0000, 11-18-127-019-0000

Commonly Known As: 1732-34, -40 Orrington Avenue

EXHIBIT C

Map of Properties Removed from the D2 Downtown Retail Core District and Placed Within D3 Downtown Core Development District

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EXHIBIT D

Development Plan

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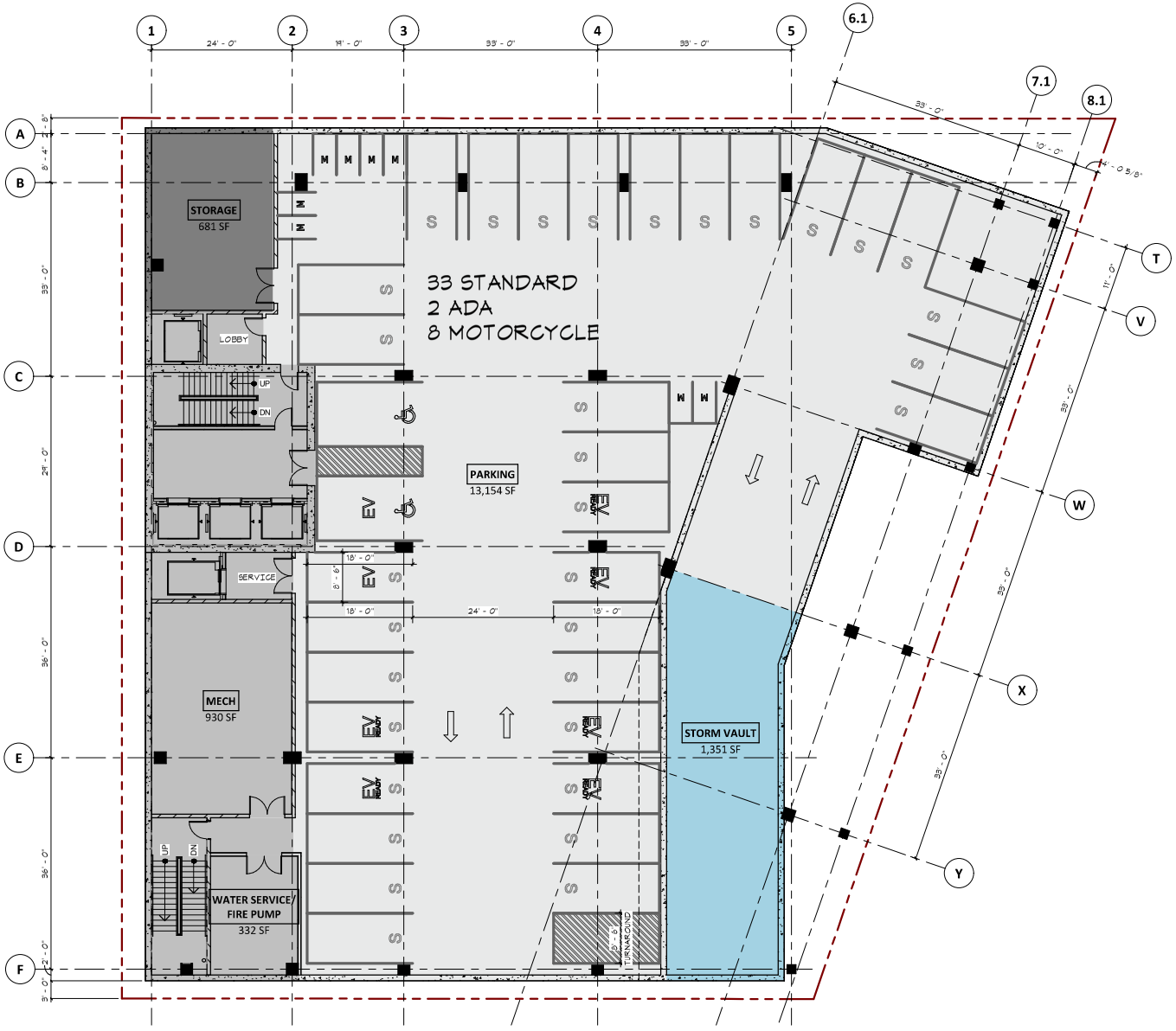
Site Plan

Area Summary

AREA SUMMARY														
												Parking		
	Use	Total GSF	Parking/ Loading	Vertical Circulation	MEP/ Acc	Retail	Office/Lab	Balcony	Other (BOH, Toilets, etc.)	Green Roof/ Terrace*	Floor Area	Standard	ADA	Motorcyle
Level -1	Parking	18149	13154	1701	3294		0	0	0	0	0	33	2	8
Level 1	Multiple	18454	2556	1626	4500	5,170	0	0	4602	0	9,772			
Level 2	Office/Lab	18833	0	1676	632		15850	0	675	0	16525			
Level 3	Office/Lab	19554	0	1556	632		14800	410	638	1518	15848			
Level 4	Office/Lab	18576	0	1556	632		15400	350	638	0	16388			
Level 5	Office/Lab	18576	0	1556	632		15400	350	638	0	16388			
Level 6	Office/Lab	18576	0	1556	632		15400	350	638	0	16388			
Level 7	Office/Lab	18576	0	1556	632		15400	350	638	0	16388			
Level 8	Office/Lab	18576	0	1556	632		15400	350	638	0	16388			
Level 9	Office/Lab	18576	0	1556	632		15400	350	638	0	16388			
Level 10	Amenity	18576	0	1556	632		0	0	9216	7172	9216			
Level 11	Mechanical	11351	0	1556	9795		0	0	0	0	0			
TOTALS		**216,373**	**15,710**	**19,007**	**23,277**	**5,170**	**123,050**	**2,510**	**18,959**	**8,690**	**149,689**	**33**	**2**	**8**

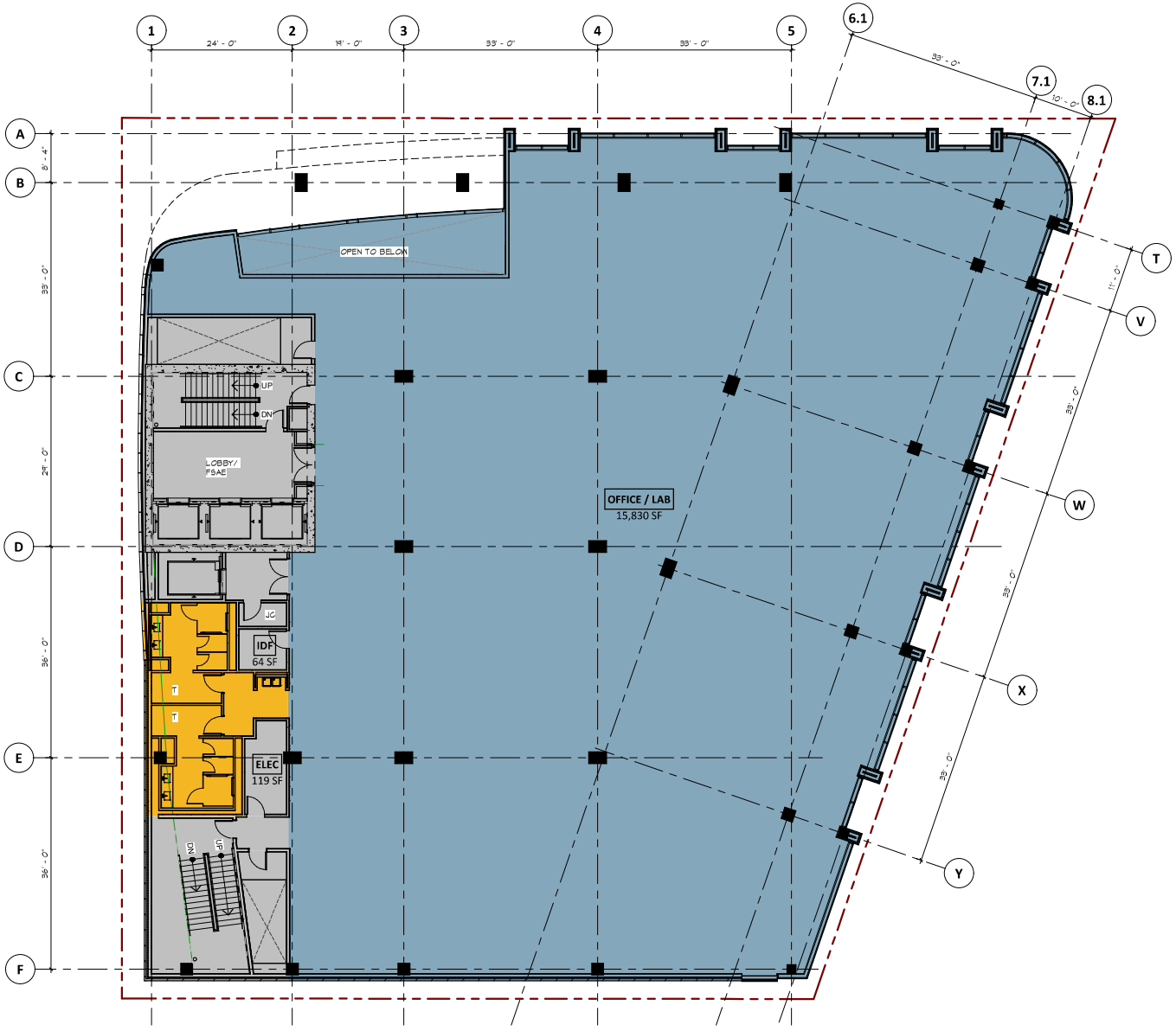
GSF applicable to FAR	149,689
Parcel Area	21,524
FAR (Total GSF excluding Parking/Loading, Vert. Circulation, Mech/Acc/Trash)	6.95

Lower Level



Level 01

Level 02



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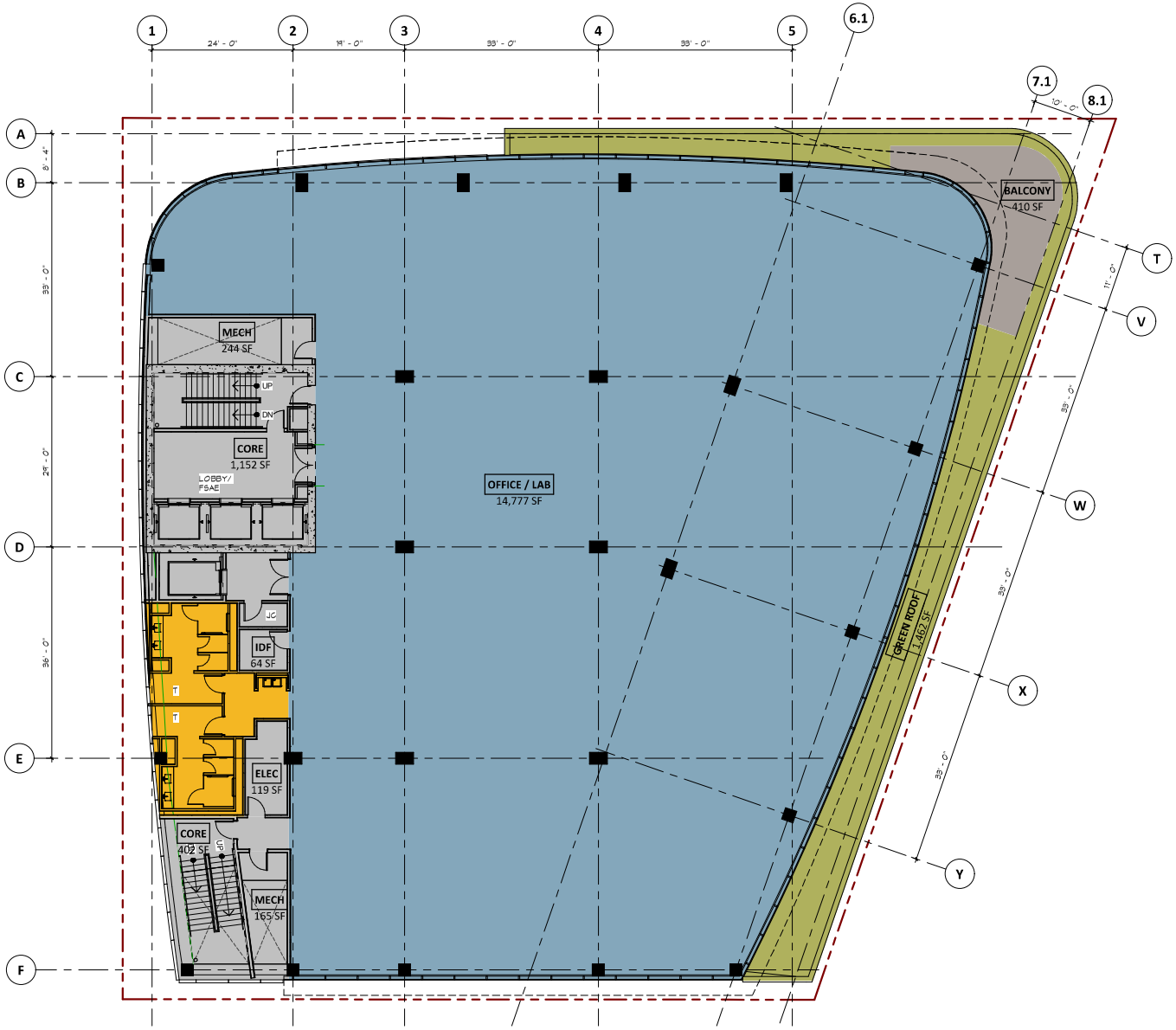
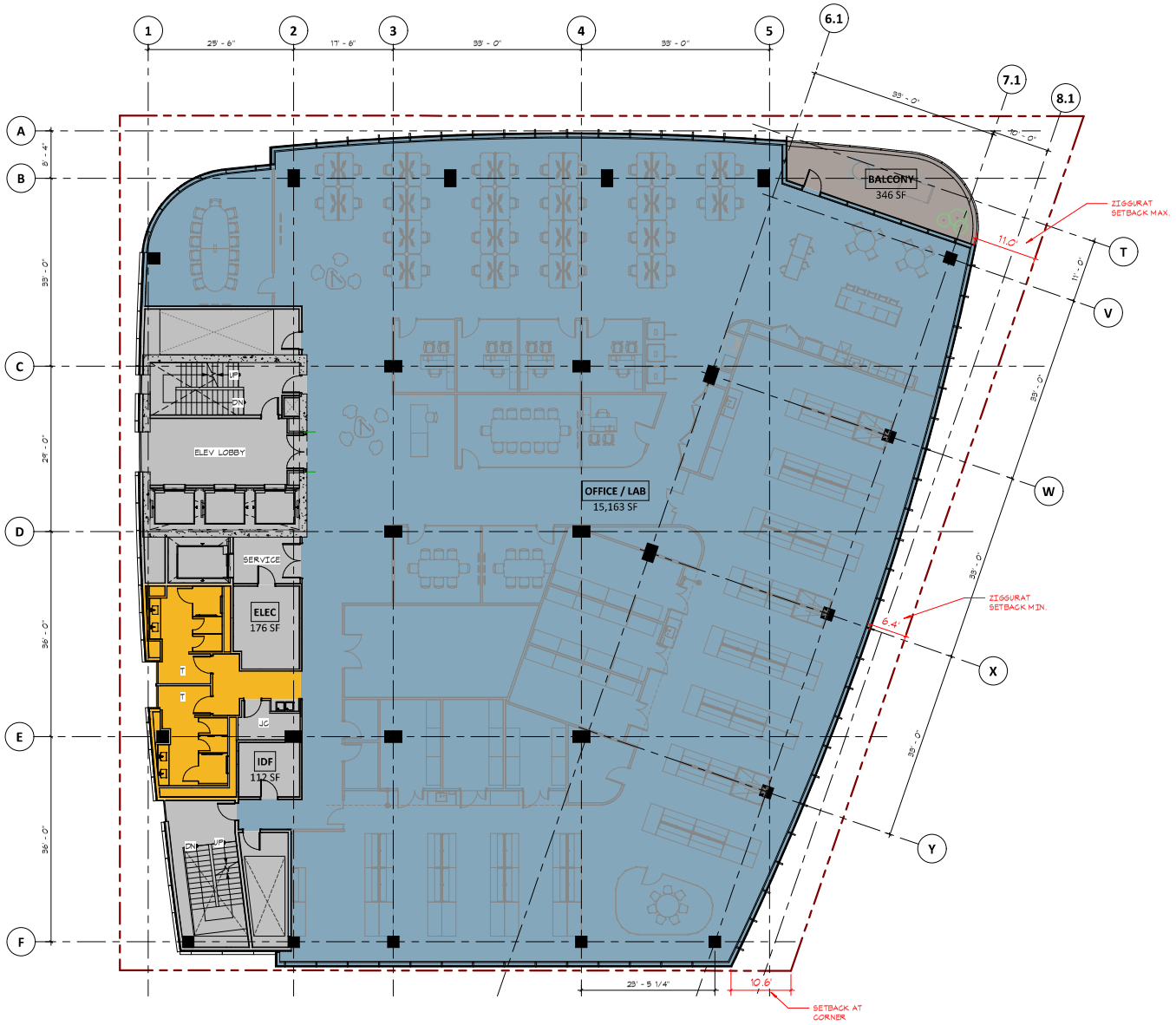


Levels 04-09



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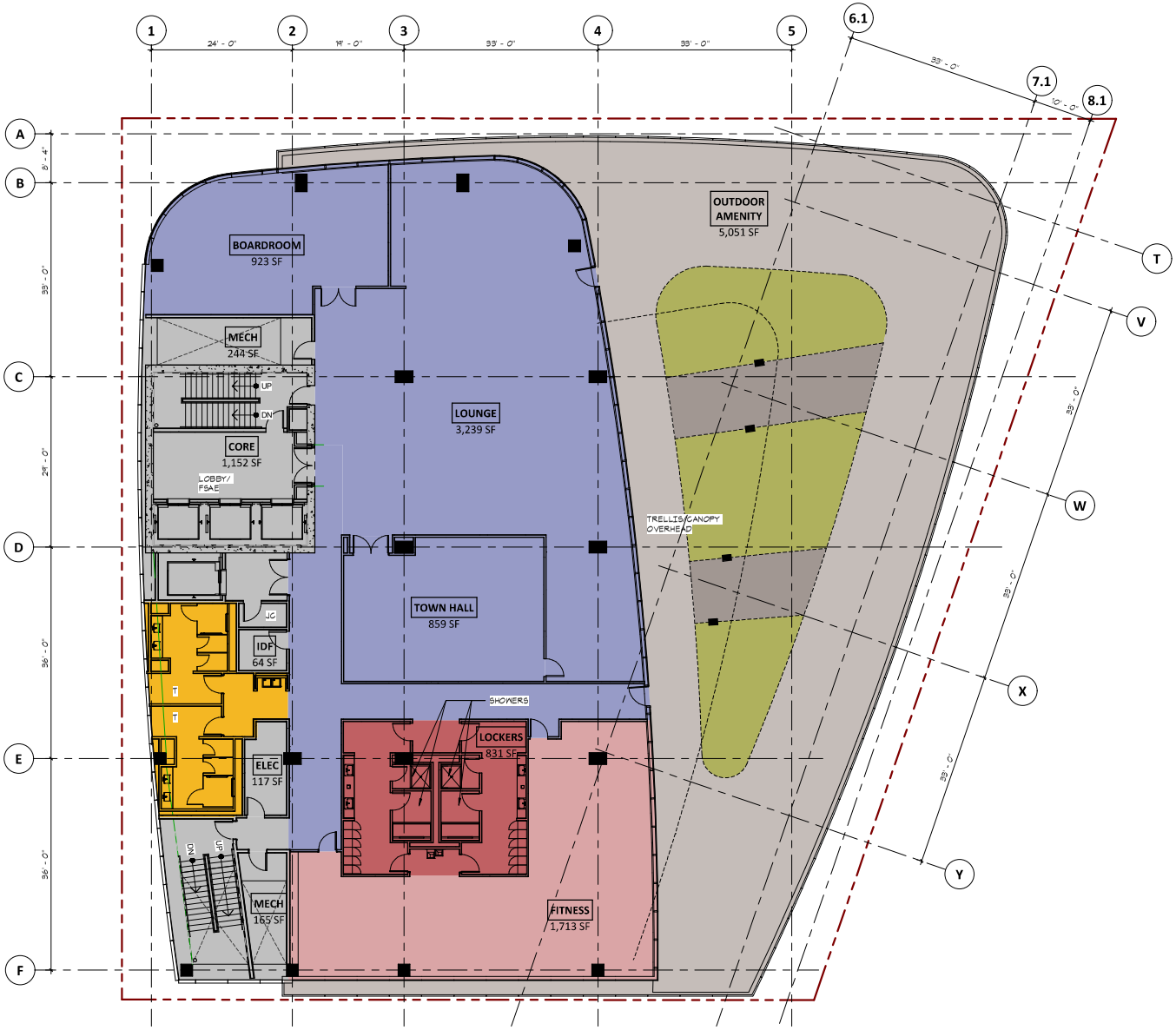

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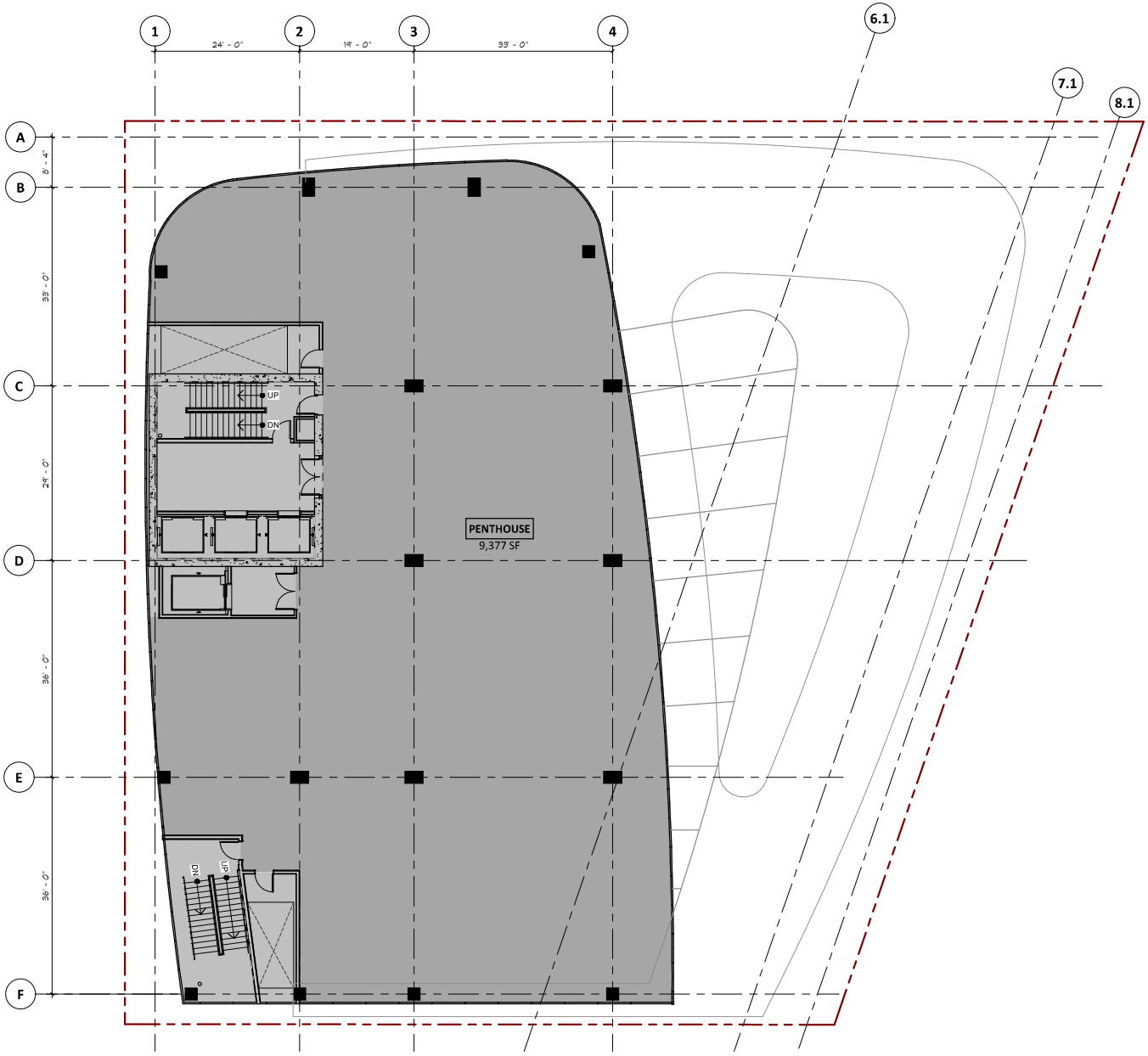
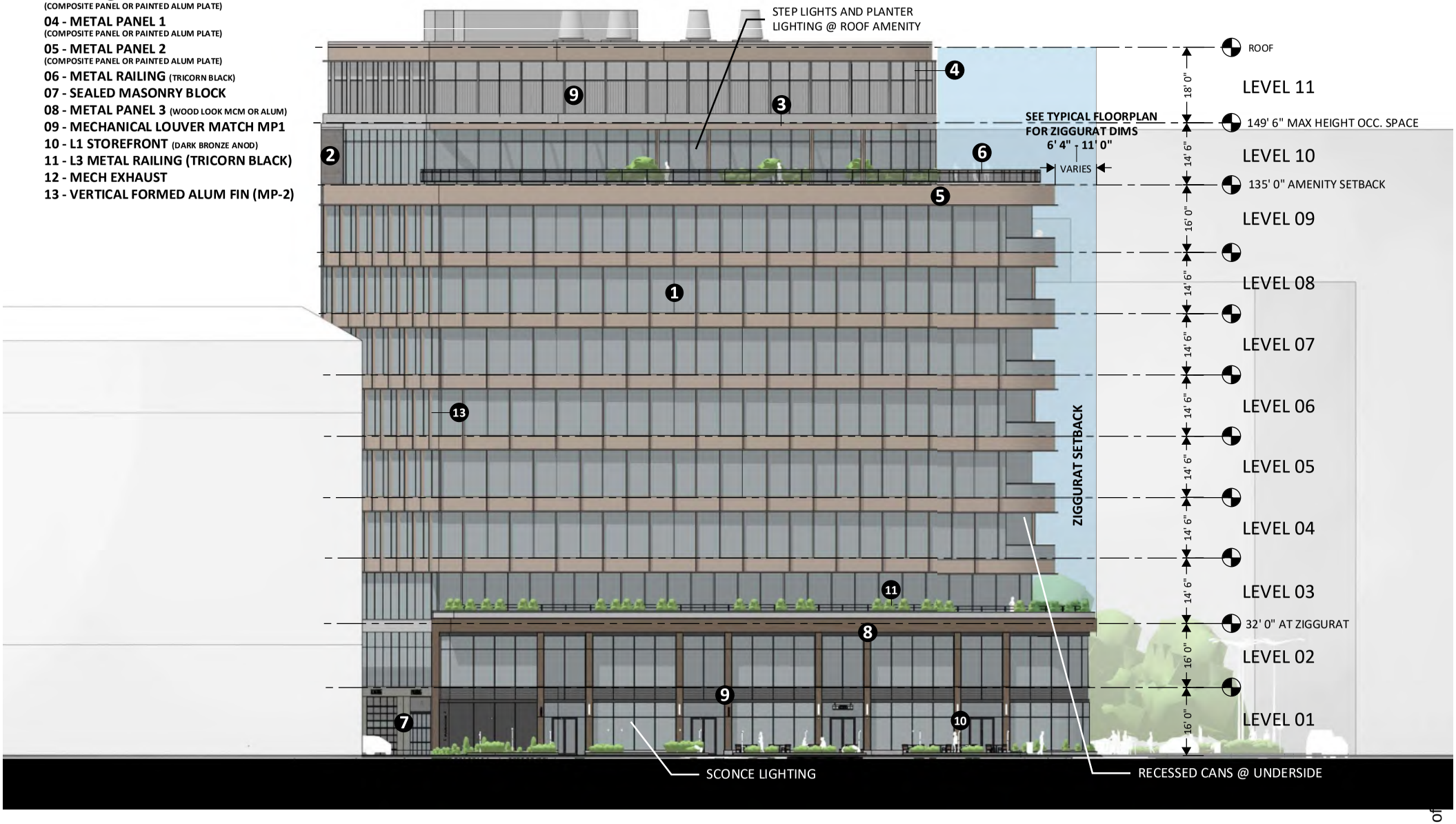
Level 11



01 - GLAZING TYPE 1 - LOW REFLECTANCE
02 - FORMED DECORATIVE PANEL
03 - MP 2 @ SHADING
(COMPOSITE PANEL OR PAINTED ALUM PLATE)
04 - METAL PANEL 1
(COMPOSITE PANEL OR PAINTED ALUM PLATE)
05 - METAL PANEL 2
(COMPOSITE PANEL OR PAINTED ALUM PLATE)
06 - METAL RAILING (TRICORN BLACK)
07 - SEALED MASONRY BLOCK
08 - METAL PANEL 3 (WOOD LOOK MCM OR ALUM)
09 - MECHANICAL LOUVER MATCH MP1
10 - L1 STOREFRONT (DARK BRONZE ANOD)
11 - L3 METAL RAILING (TRICORN BLACK)
12 - MECH EXHAUST
13 - VERTICAL FORMED ALUM FIN (MP-2)



East Elevation

0 10 20 50 100

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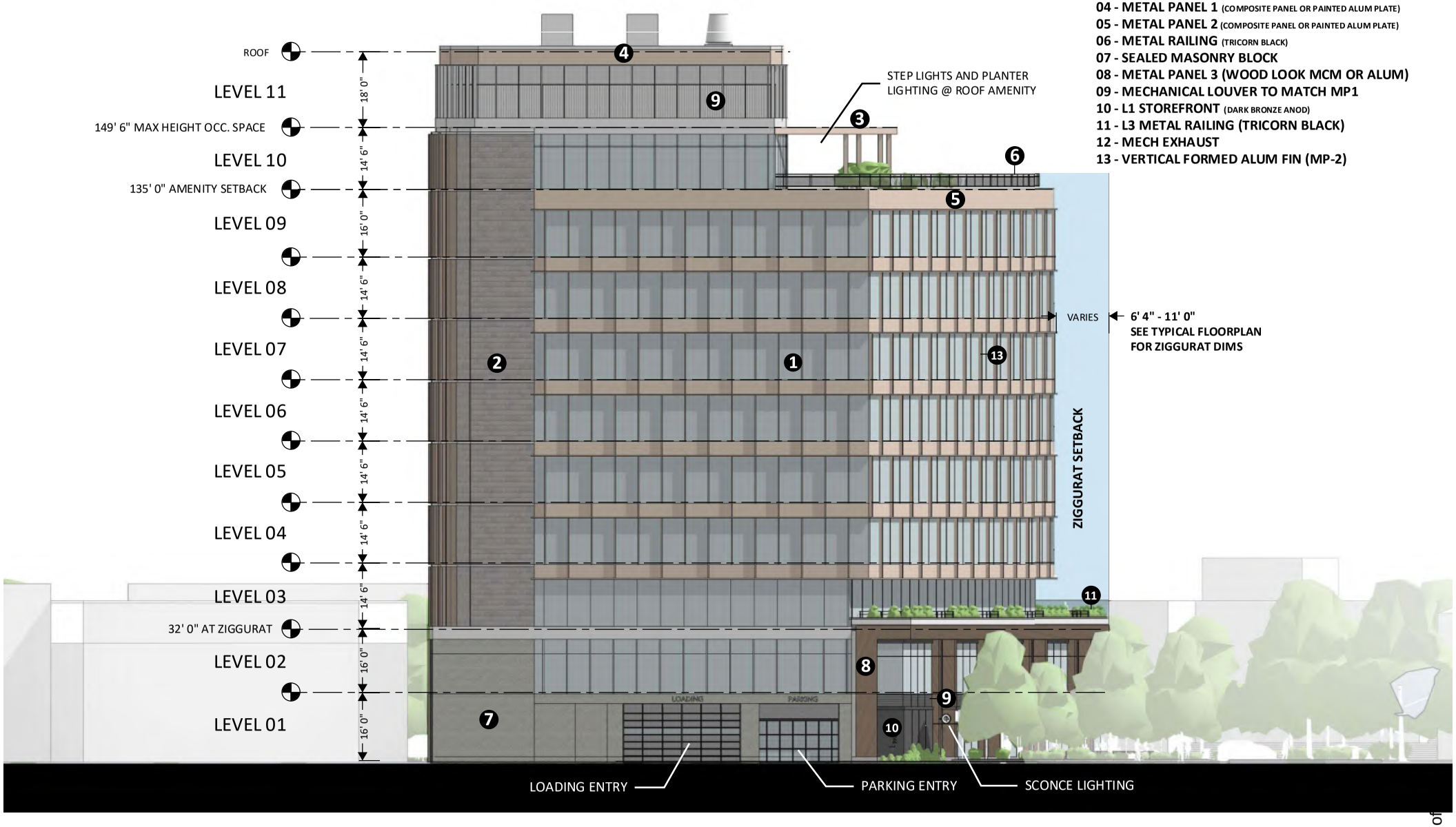

South Elevation

0 10 20 50 100

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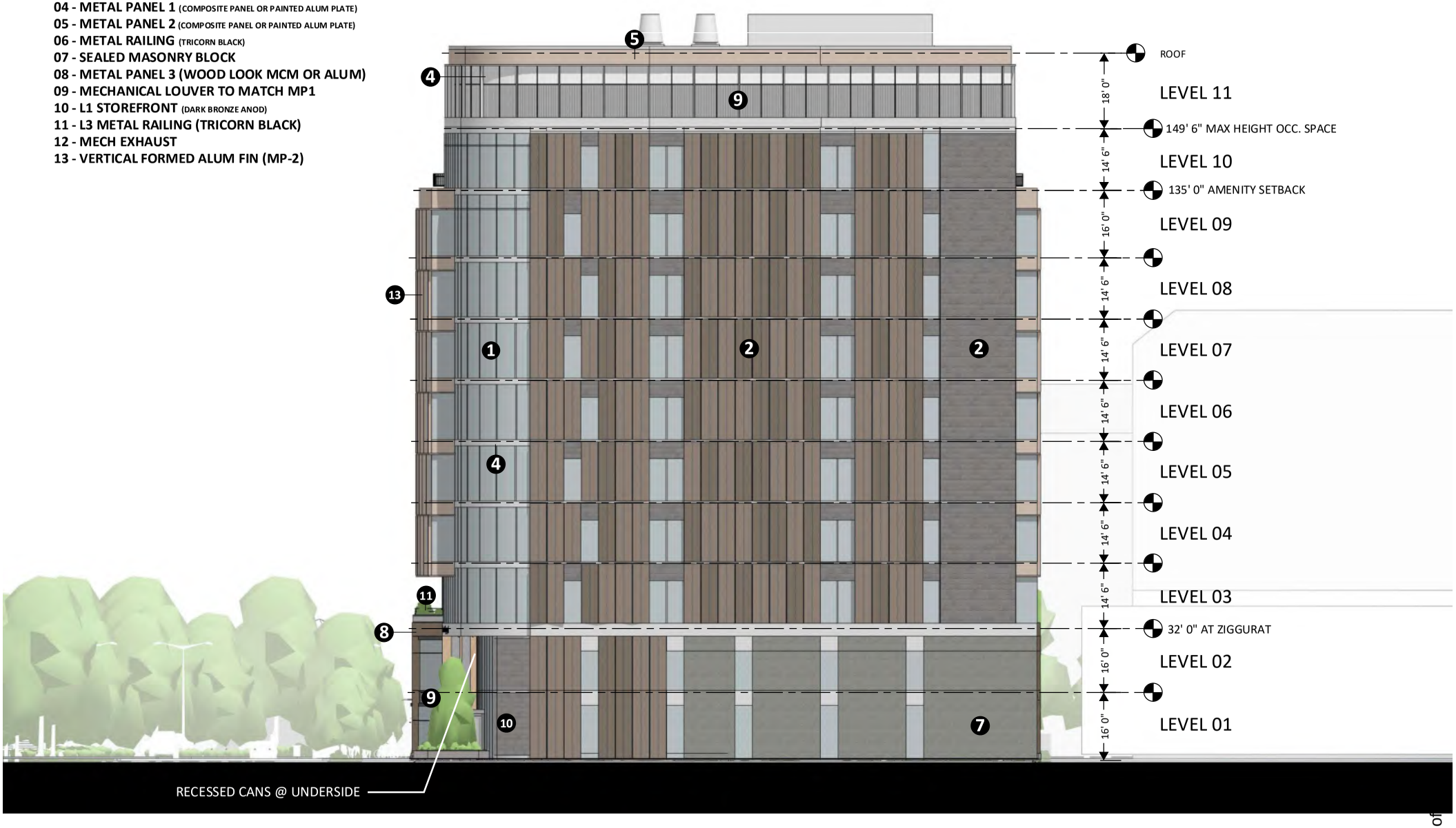
01 - GLAZING TYPE 1 - LOW REFLECTANCE
02 - FORMED DECORATIVE PANEL - COLOR TO MATCH MP 2
03 - MP 2 @ SHADING (COMPOSITE PANEL OR PAINTED ALUM PLATE)
04 - METAL PANEL 1 (COMPOSITE PANEL OR PAINTED ALUM PLATE)
05 - METAL PANEL 2 (COMPOSITE PANEL OR PAINTED ALUM PLATE)
06 - METAL RAILING (TRICORN BLACK)
07 - SEALED MASONRY BLOCK
08 - METAL PANEL 3 (WOOD LOOK MCM OR ALUM)
09 - MECHANICAL LOUVER TO MATCH MP1
10 - L1 STOREFRONT (DARK BRONZE ANOD)
11 - L3 METAL RAILING (TRICORN BLACK)
12 - MECH EXHAUST
13 - VERTICAL FORMED ALUM FIN (MP-2)



West Elevation

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Trammell Crow Company
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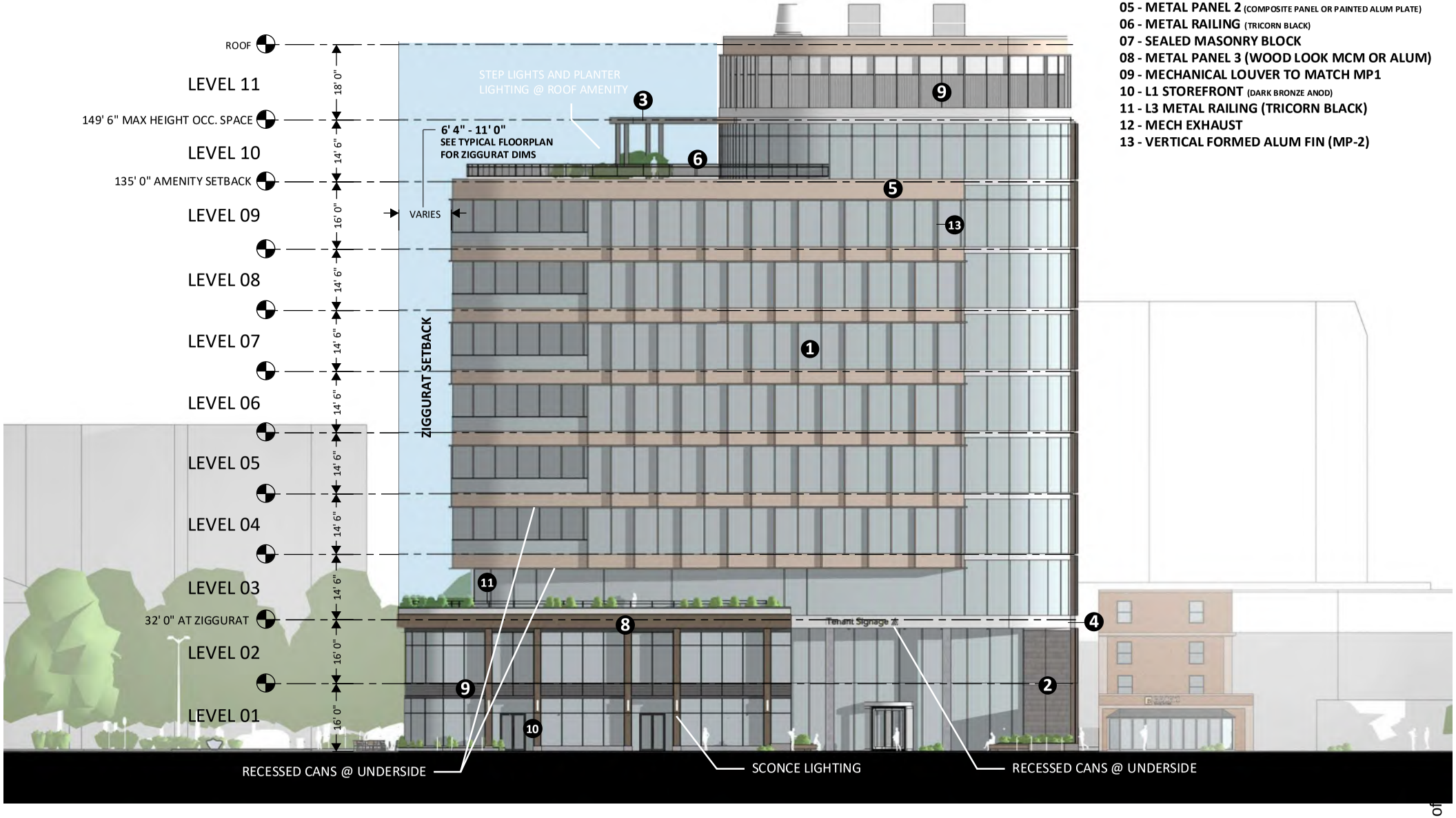
FEB 28, 2022

1740 Orrington Avenue
P&D I City Council



North Elevation

0 10 20 50 100

Trammell Crow Company
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FEB 28, 2022

1740 Orrington Avenue
P&D | City Council

WEST ELEVATION - MP DETAIL

Trammell Crow Company
esg | ARCHITECTURE & DESIGN

FEB 28, 2022

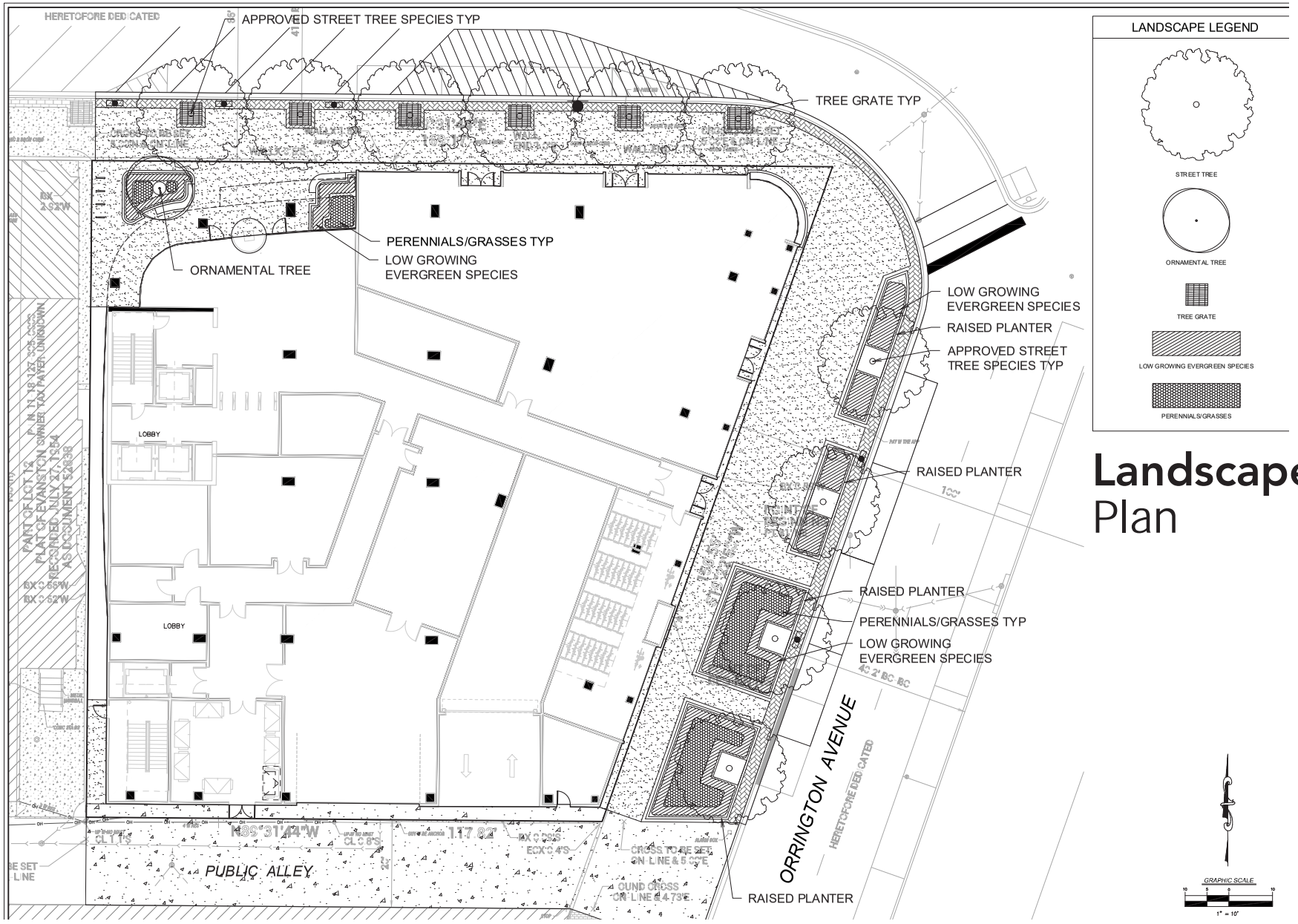
1740 Orrington Avenue
P&D I City Council

NORTH ELEVATION | PEDESTRIAN EXPERIENCE

NORTH ELEVATION | VEHICULAR EXPERIENCE

NORTHEAST PEDESTRIAN EXPIERENCE AT CORNER

EAST ELEVATION | VEHICULAR EXPERIENCE



Landscape Plan

Trammell Crow Company
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FEB 28, 2022

1740 Orrington Avenue
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Taxus x media 'Everlow'
Everglow Yew
Planting Size: 8"-12" Tall
Mature Height: 1.0'-1.5'
Mature Spread: 4.0'-5.0'

Buxus 'Green Gem'
Green Gem Boxwood
Planting Size: 12"-18" Tall
Mature Height: 3.0'-4.0'
Mature Spread: 3.0'-4.0'

Buxus sinica var. insularis
Korean Boxwood
Planting Size: 12"-18" Tall
Mature Height: 2.0'-4.0'
Mature Spread: 3.0'-5.0'

Dryopteris marginalis
Marginal Wood Fern
Planting Size: 1-Gallon Container
Mature Height: 1.5'-2.0'
Mature Spread: 1.5'-2.0'

Liriope spicata
Creeping Lilyturf
Planting Size: 1-Gallon Container
Mature Height: 0.75'-1.5'
Mature Spread: 1.0'-2.0'

1740 ORRINGTON AVENUE

Conceptual Planting Palette: Low Growing Evergreens

Echinacea 'Magnus'
Magnus Coneflower
Planting Size: 1-Gallon Container
Mature Height: 2.5'-3.0'
Mature Spread: 1.0'-1.5'

Monarda didyma 'Coral Reef'
Coral Reef Beebalm
Planting Size: 1-Gallon Container
Mature Height: 3.0'-4.0'
Mature Spread: 2.0'-3.0'

Penstemon digitalis 'Husker Red'
Husker Red Beardtongue
Planting Size: 1-Gallon Container
Mature Height: 2.0'-3.0'
Mature Spread: 1.0'-2.0'

Veronica 'Wizard of Ahhs'
Wizard of Ahhs Speedwell
Planting Size: 1-Gallon Container
Mature Height: 1.0'-2.0'
Mature Spread: 1.0'-2.0'

1740 ORRINGTON AVENUE
Conceptual Planting Palette: Perennials

Chasmanthium latifolium
Northern Sea Oats
Planting Size: 1-Gallon Container
Mature Height: 2.0'-5.0'
Mature Spread: 1.0'-2.5'

Deschampsia cespitosa
Tufted Hair Grass
Planting Size: 1-Gallon Container
Mature Height: 2.0'-3.0'
Mature Spread: 1.0'-2.0'

Panicum virgatum 'Shenandoah'
Shenandoah Switch Grass
Planting Size: 1-Gallon Container
Mature Height: 3.0'-4.0'
Mature Spread: 3.0'-4.0'

1740 ORRINGTON AVENUE
Conceptual Planting Palette: Grasses

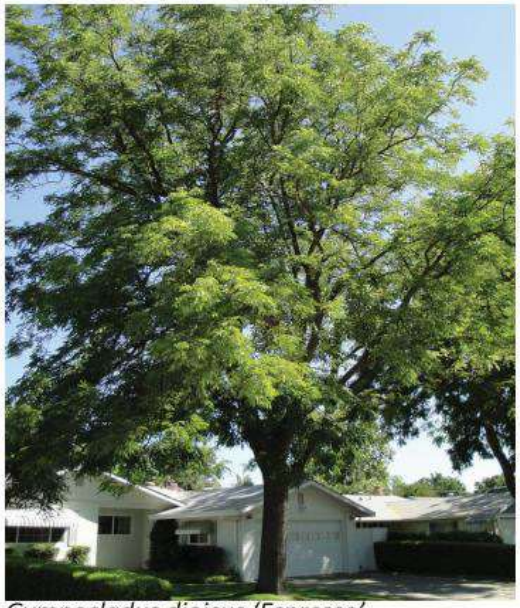
Cercis canadensis 'Little Woody'
Little Woody Redbud
Planting Size: 1 1/2" Caliper
Mature Height: 10'-12'
Mature Spread: 8.0'-10'

Chionanthus virginicus
Fringe Tree
Planting Size: 1 1/2" Caliper
Mature Height: 12'-20'
Mature Spread: 12'-20'

1740 ORRINGTON AVENUE
Conceptual Planting Palette: Ornamental Trees

Acer saccharum 'Green Mountain'
Green Mountain Sugar Maple
Planting Size: 2 1/2" Caliper
Mature Height: 40'-60'
Mature Spread: 25'-45'

Ulmus 'Urban'
Urban Hybrid Elm
Planting Size: 2 1/2" Caliper
Mature Height: 40'-50'
Mature Spread: 30'-35'



Gymnocladus dioicus 'Espresso'
Espresso Kentucky Coffee Tree (Fruitless)
Planting Size: 2 1/2" Caliper
Mature Height: 40'-50'
Mature Spread: 30'-35'

1740 ORRINGTON AVENUE
Conceptual Planting Palette: Street Trees

WOOD-LOOK MP-3

@ LEVEL 1 PODIUM (BOD - HERMOSA WOOD PURE+FREEFORM - RIVETLESS DRY JOINT PLATE)

WOOD-LOOK MP-4

@ BALCONY SOFFITS (BOD - LONGBOARD 4" V GROOVE TABLE WALNUT)

GLAZING - GLASS TYPE 2

BOD - SOLARBAN 60 (2) ACUITY + ACUITY
VLR - 11% VLT- 73 (LEVEL 1 STOREFRONT)

GLAZING - GLASS TYPE 1

BOD - SOLARBAN 60 (2) OPTIGRAY + CLEAR
VLR - 8% VLT- 50

ARCHITECTURAL LOUVER

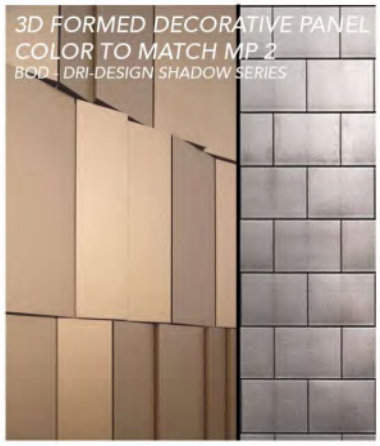
(4" DRAINABLE BLADE - COLOR MATCH MP)

METAL PANEL 2 (COMPOSITE PANEL OR PAINTED ALUM PLATE)

BOD - ALUCOBOND ACM - HARVET GOLD MICA

3D FORMED DECORATIVE PANEL COLOR TO MATCH MP 2

BOD - DRI-DESIGN SHADOW SERIES



TRI-CORN BLACK

BALCONY RAILINGS + TOP CAPS

EDB ANODIZE

LEVEL 1 STOREFRONTS

MASONRY BLOCK (ECHELON)

INSULTECH - SHADOW GRAY

METAL PANEL 1 (COMPOSITE PANEL OR PAINTED ALUM PLATE)

BOD - ALUCOBOND ACM - ZINC ELEMENT SERIES

Exterior Materials

6" Recessed Downlights

Double Height Lobby

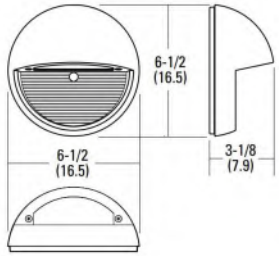
Cast Stone Kneewall

Plaza Plantings

Evanston approved site trees

Plaza Seating

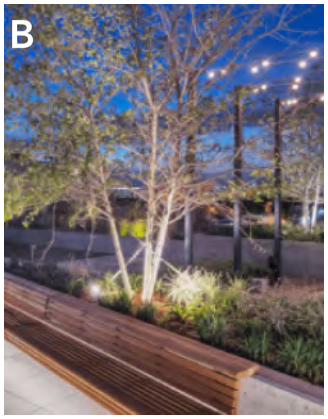
A

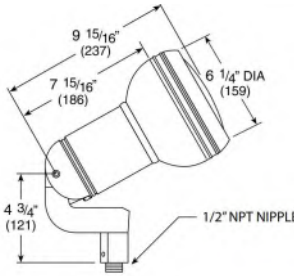


https://img.acuitybrands.com/public-assets/catalog/122749/olsr-olss.pdf?abl_version=11%2f28%2f2021+23:10:25&DOC_Type=SPEC_SHEET

Level 10 (Amenity Deck) Code required step lighting for illuminated pathways - Located at raised planters

B

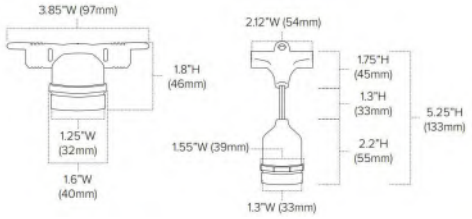




https://img.acuitybrands.com/public-assets/catalog/47144/4640_km_led_white.pdf?abl_version=11%2f22%2f2021+18:45:50&DOC_Type=SPEC_SHEET

Level 10 and Level 1- Accent uplighting at planting beds, time sensitive fixtures will shut off during overnight hours.

C

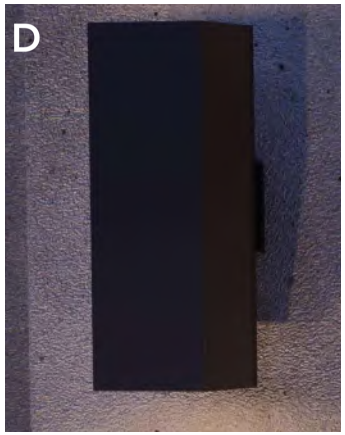


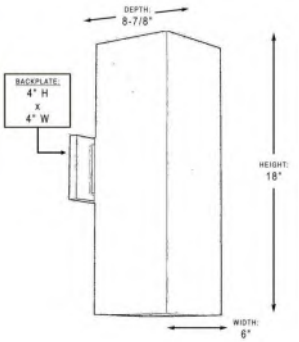
https://www.prolighting.com/specsheets/_specsheet_commgradelightstring-ls2.pdf

Level 10 (Amenity Deck) Decorative string lights within overhead shading structure. Time sensitive fixtures will shut off during overnight hours

Level 1 (Building Accent) Sconce fixtures located at vertical column expressions to create safe/vibrant pedestrian pathways along buildings edge

D

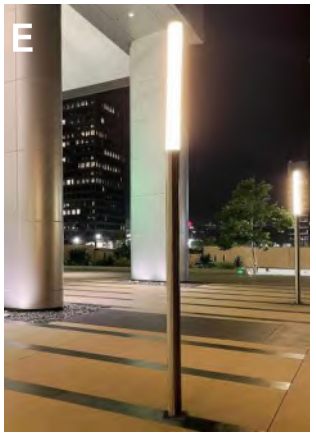


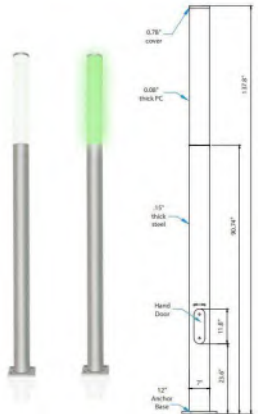


https://cdn.shopify.com/s/files/1/1554/9515/files/UHP1113_SPEC.pdf?v=1531513534

Level 1- Bollard fixtures located within level 1 planting beds along Orrington for outdoor bistro/restaurant.

E

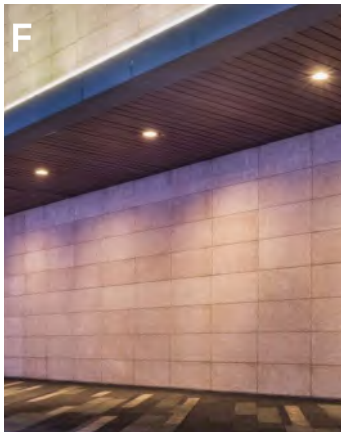


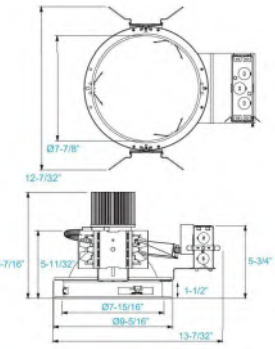


https://www.alconlighting.com/specsheets/alcon/11418.pdf

L1-L9- Recessed downlights within soffits/canopies of private balconies and building entrance.

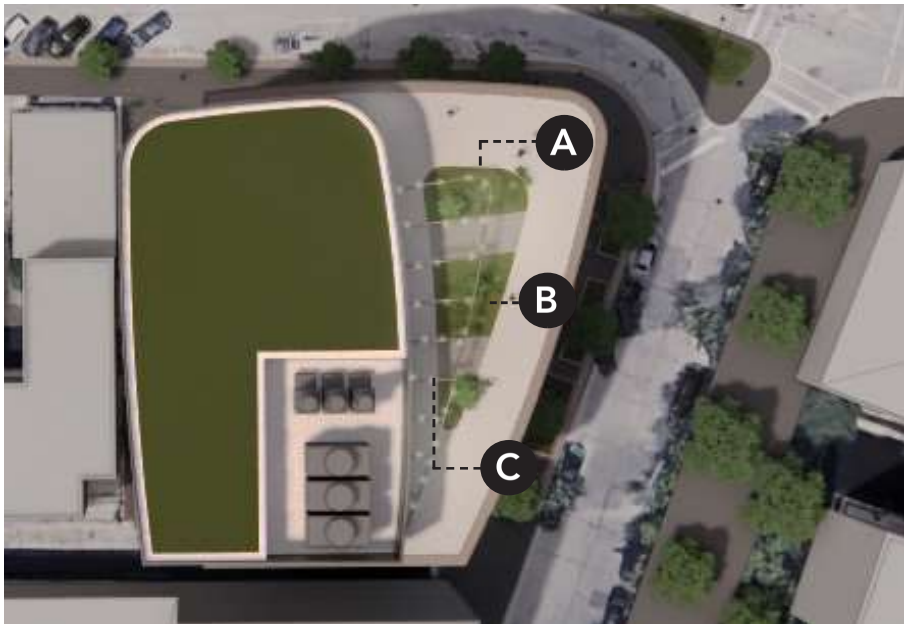
F





https://www.alconlighting.com/specsheets/alcon/14134-Mirage_RGBW.pdf

Exterior Lighting **Refer to next page and building elevation for light locations**

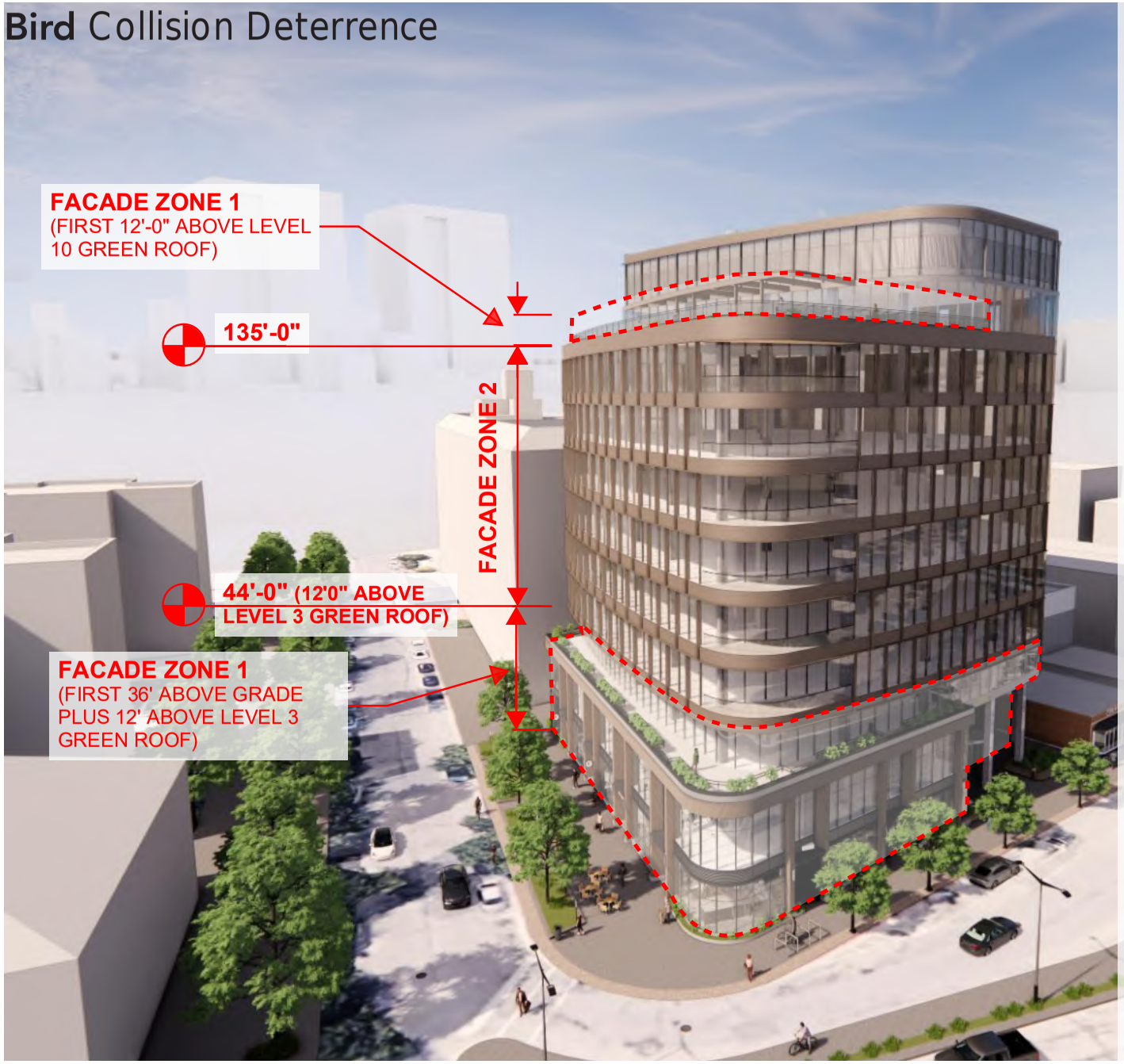


Address monument signage at entry with eyebrow anchor tenant - primary pedestrian entry point.

Parking indicator from one-way along Orrington. Loading and Parking Entry's marked with indicators above. auditory warning light and sounds for pedestrian safety

Wayfinding/Signage

Bird Collision Deterrence



BIRD FRIENDLY STRATEGIES:

LEVEL 10 (FACADE ZONE 1)

10.1 - EXTERIOR LIGHTING FIXTURES SELECTED TO REDUCE GLARE AND LIGHT SPILL/POLLUTION. NON CODE REQUIRED LIGHTS PROGRAMMBLE, TO BE DIMMED OR TURNED OFF WHEN NOT IN USE.

10.2 - PROGRAMMABLE INTERIOR LIGHTING WITH OCCUPANCY SENSORS

10.3 - ALL METAL RAILINGS AND METAL INFILL PANELS

10.4 - LOCATE LOW-LYING PLANTINGS TO REDUCE REFLECTIONS AND MINIMIZE COLLISIONS

10.5 LOW REFLECTIVITY GLAZING

LEVELS 4-9 (FACADE ZONE 2)

4.1 - VERTICAL MULLION EXTENSIONS/FINS INTERRUPT LONG EXPANSES OF GLASS

4.2 - PROGRAMMABLE INTERIOR LIGHTING WITH OCCUPANCY SENSORS

4.3 - BALCONY RAILINGS WITH BIRD FRIENDLY GLASS OR METAL INFILL PANELS.

4.4 - LOW REFLECTIVITY GLAZING

LEVELS 1-3 (FACADE ZONE 1)

1.1 - EXTERIOR LIGHTING FIXTURES SELECTED TO REDUCE GLARE AND LIGHT SPILL/POLLUTION. LIGHTS NOT REQUIRED BY CODE OR FOR SAFETY TO BE PROGRAMMBLE, DIMMED OR TURNED OFF WHEN NOT IN USE.

1.2 - PROGRAMMABLE INTERIOR LIGHTING WITH OCCUPANCY SENSORS. LIGHTS NOT REQUIRED BY CODE OR FOR SAFETY TO BE PROGRAMMBLE, DIMMED OR TURNED OFF WHEN NOT IN USE.

1.3 - ALL METAL RAILINGS AND METAL INFILL PANELS

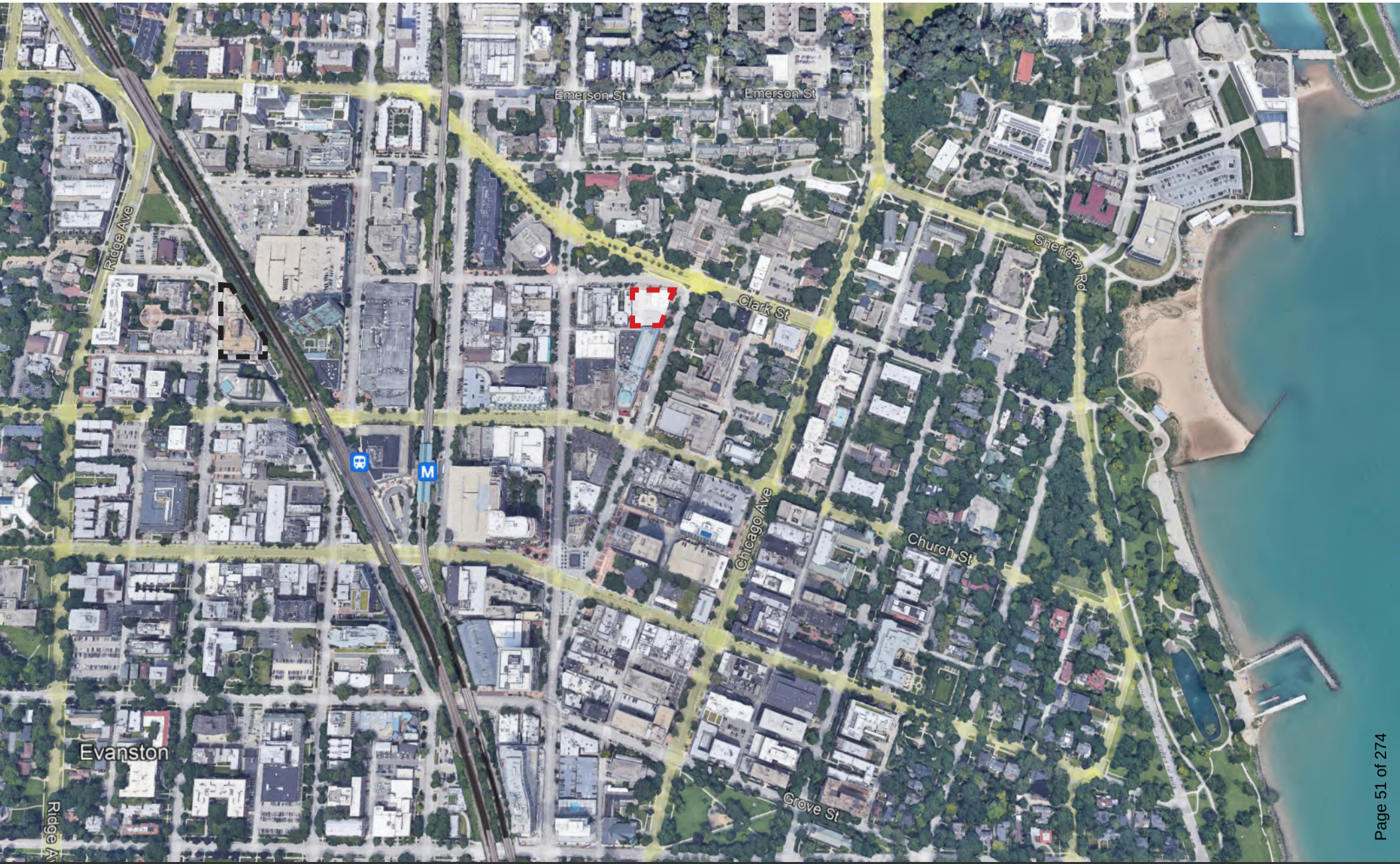
1.4 - LOCATE LOW-LYING PLANTINGS TO REDUCE REFLECTIONS AND MINIMIZE COLLISIONS

1.5 - LOW REFLECTIVITY GLAZING

1.6 - RECESSED GLAZING AND ENTRIES WITH OVERHANGS ON LEVELS 1 & 2 TO MINIMIZE FLY-THROUGH CONDITIONS*

*SITUATIONS IN WHICH GLASS ELEMENTS PROVIDE ANY CLEAR LINE OF SIGHT TO BIRDS CREATING THE ILLUSION OF A VOID LEADING TO THE OTHER SIDE.

Context Map

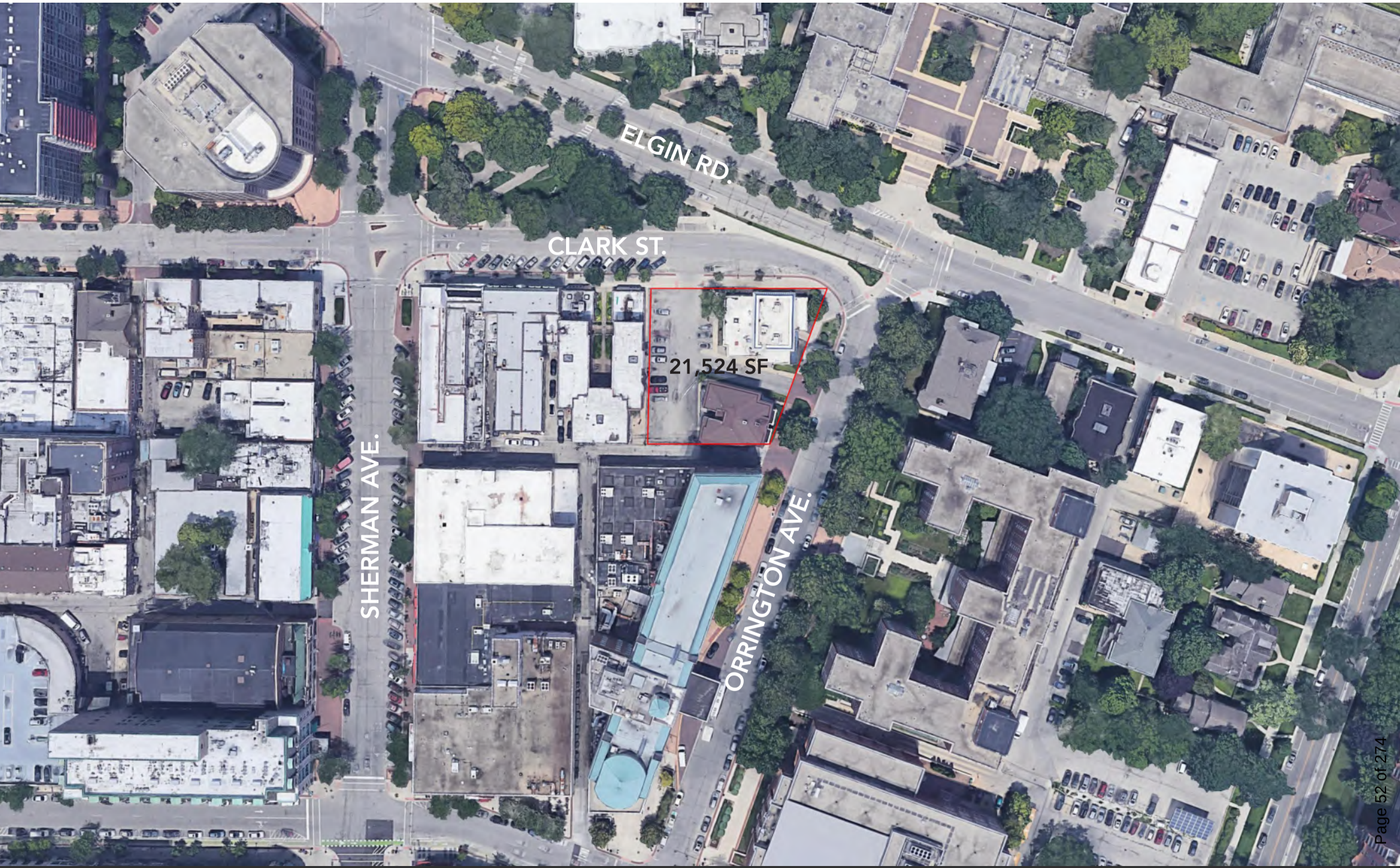


Trammell Crow Company
esg | ARCHITECTURE & DESIGN

FEB 28, 2022

1740 Orrington Avenue
P&D | City Council

Site Context

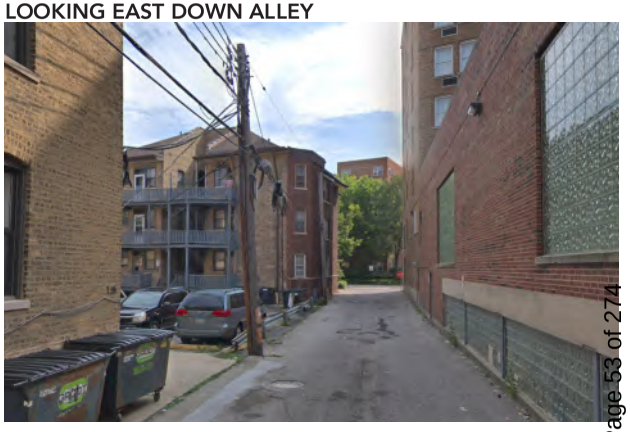


Site Context

LOOKING EAST DOWN CLARK ST.

LOOKING WEST FROM ORRINGTON

LOOKING EAST DOWN ALLEY



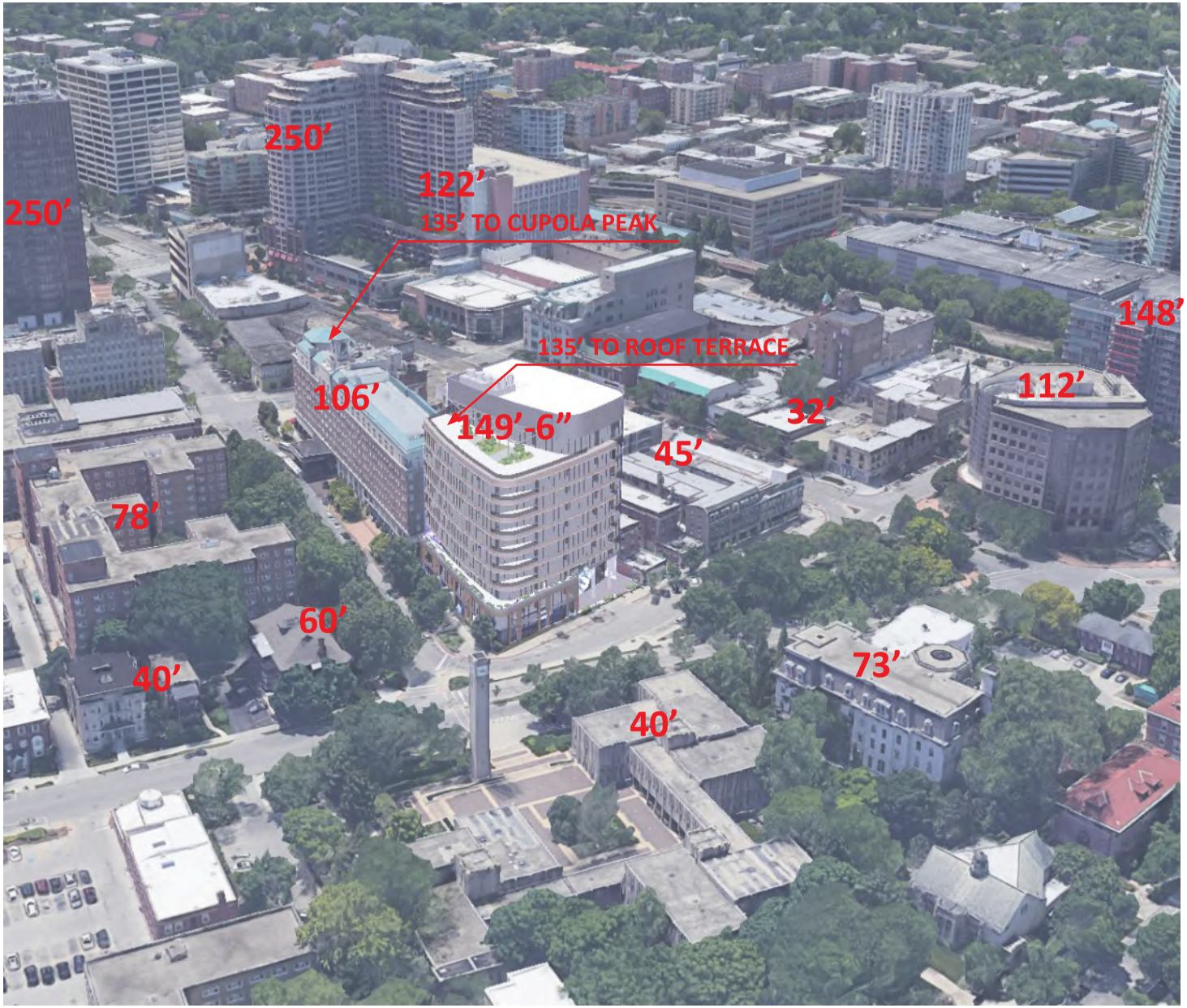
Aerial Perspectives

AERIAL FROM NW

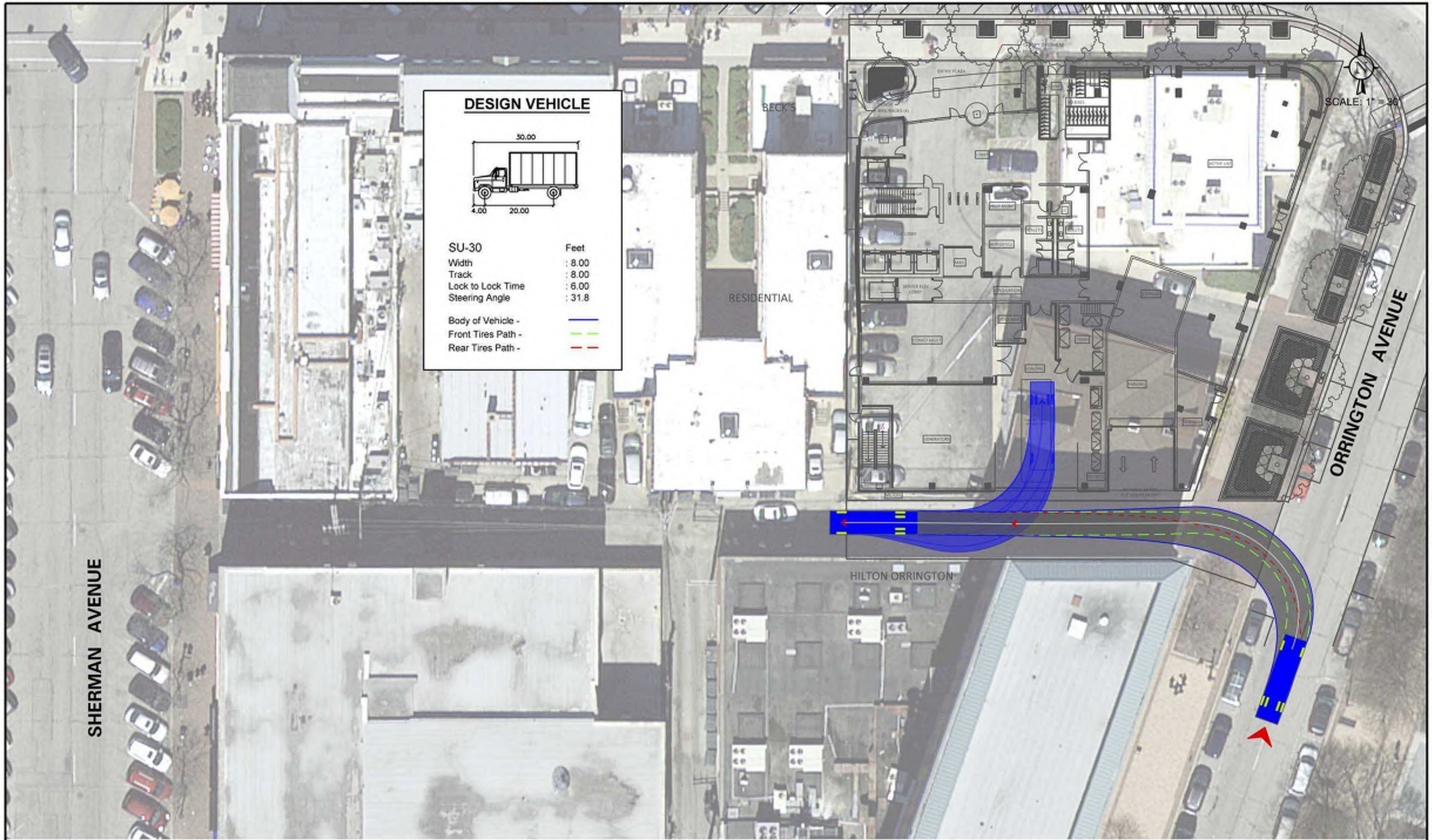
AERIAL FROM SW

AERIAL FROM SE

Height Comparison



NOTE: BUILDING HEIGHTS MEASURED FROM GOOGLE EARTH PRO

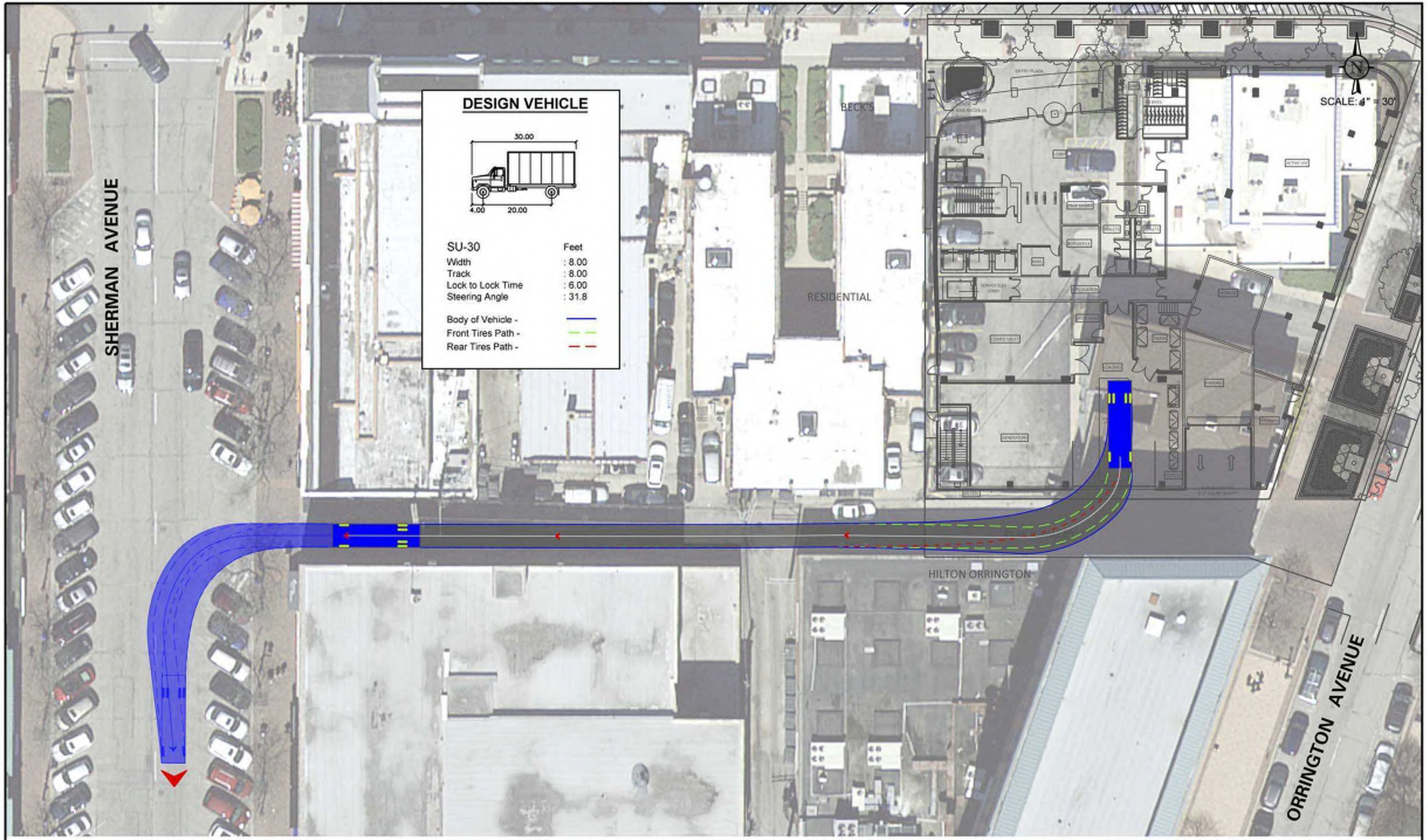


OFFICE BUILDING
DEVELOPMENT
EVANSTON, ILLINOIS

SINGLE UNIT TRUCK INBOUND MANEUVER

DRAWN: MD CHECKED: LA
DATE: 10-11-21 REV: 12-16-21
PROJECT # 21-195
EXHIBIT: A1

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.



OFFICE BUILDING
DEVELOPMENT
EVANSTON, ILLINOIS

SINGLE UNIT TRUCK OUTBOUND MANEUVER

DRAWN: MD CHECKED: LA
DATE: 10-11-21 REV: 12-16-21
PROJECT # 21-195
EXHIBIT: A2

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Trammell Crow Company

esg ARCHITECTURE & DESIGN

Dec. 22, 2021

1740 Orrington Avenue
Staff Comment Review | DAPR

As of 3/14/22
Per 2/28/22 comments

1740 ORRINGTON AVE
PUBLIC BENEFIT

- Contribution of **$310,000** toward the City' s affordable housing fund
- Contribution to Divvy fund/account **$5,000**
- Contribution of $**100,00** to the City' s public transit improvement fund
- Elimination of 2 curb cuts and a net gain of 3 on-street public parking stalls **$10,000**
- Installation of Transit Tracker Board with the estimated public benefit of **$25,000**
- Reconstruction of public alley **$235,000**
- Burial of above-grade utility lines along the public alley with the estimated public benefit of **$100,000**
- Contribution of **$50,000** to the street furniture, activities, and other aesthetic improvements downtown Evanston

TOTAL PUBLIC BENEFIT approximately $835,000

- **OTHER BENEFITS**
- Modern building design to replace an existing building and open parking lot
- Implementing Bird-Friendly features
- New retail/dining customers as the prospective employees of the office/laboratory space
- Construction Jobs - committed to job fair focused on hiring local
- Job creation from the office/laboratory space and retail/restaurant space
- New street trees on Clark Street
- Stormwater detention per enhanced code
- Estimated over $45,000,000 ($20MM NPV) increase in real estate taxes over 20 years compared to existing

U.S. Life Sciences Trends

The “Century of Biology” lifts off

NOVEMBER 2021

Three takeaways from Q3 2021

The market has never been stronger.

All-time highs reached in funding, job growth, demand for lab space and new construction.

Premier markets lead and surprises emerge in the Sun Belt.

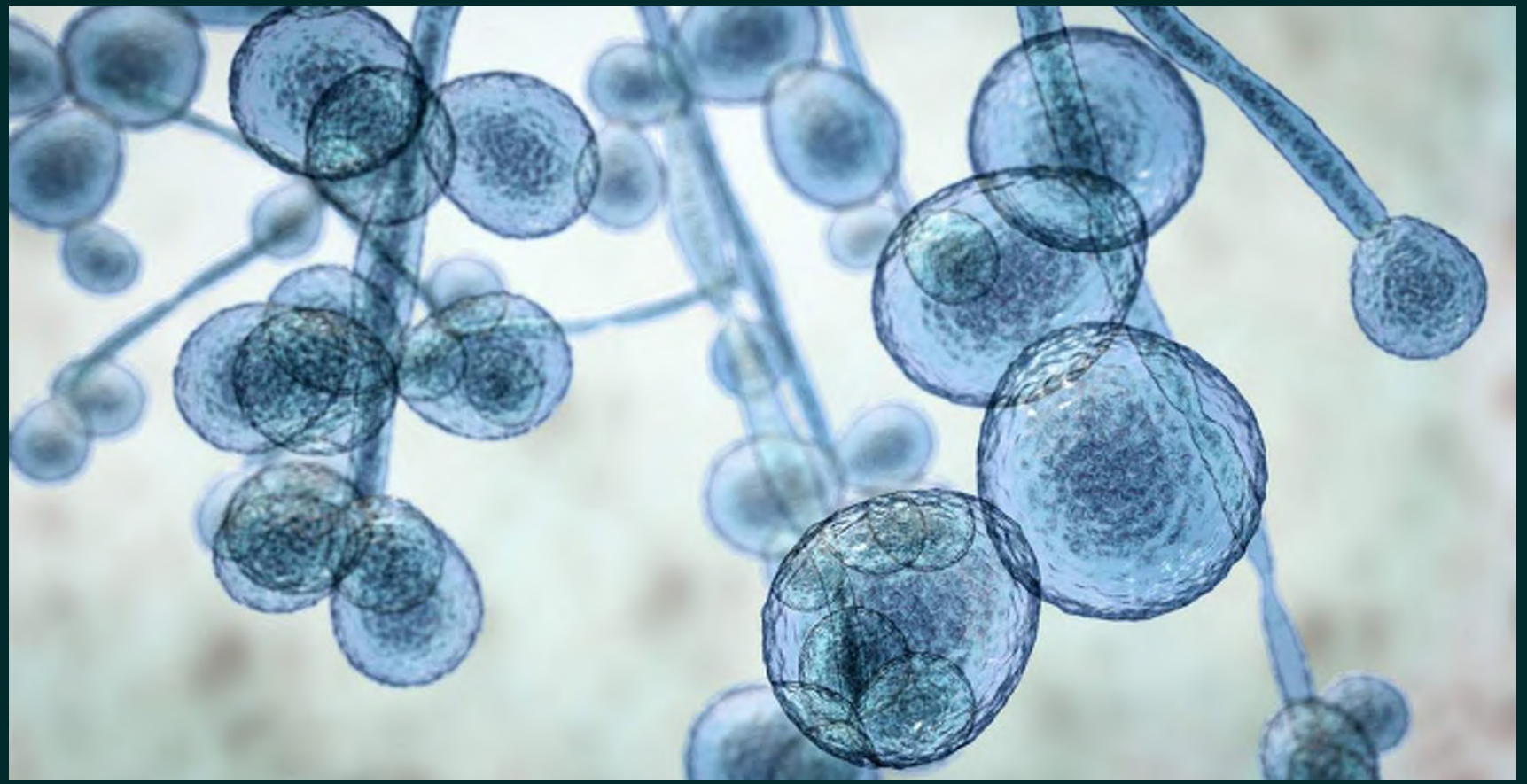
Boston, San Francisco, and San Diego remain the dominant markets. Raleigh-Durham, Philadelphia and Washington, D.C. are rising rapidly. Dallas, Atlanta and Phoenix begin to emerge.

The near-term outlook remains bright.

Data trends and sentiment from the field suggest continued active market conditions over the next year.

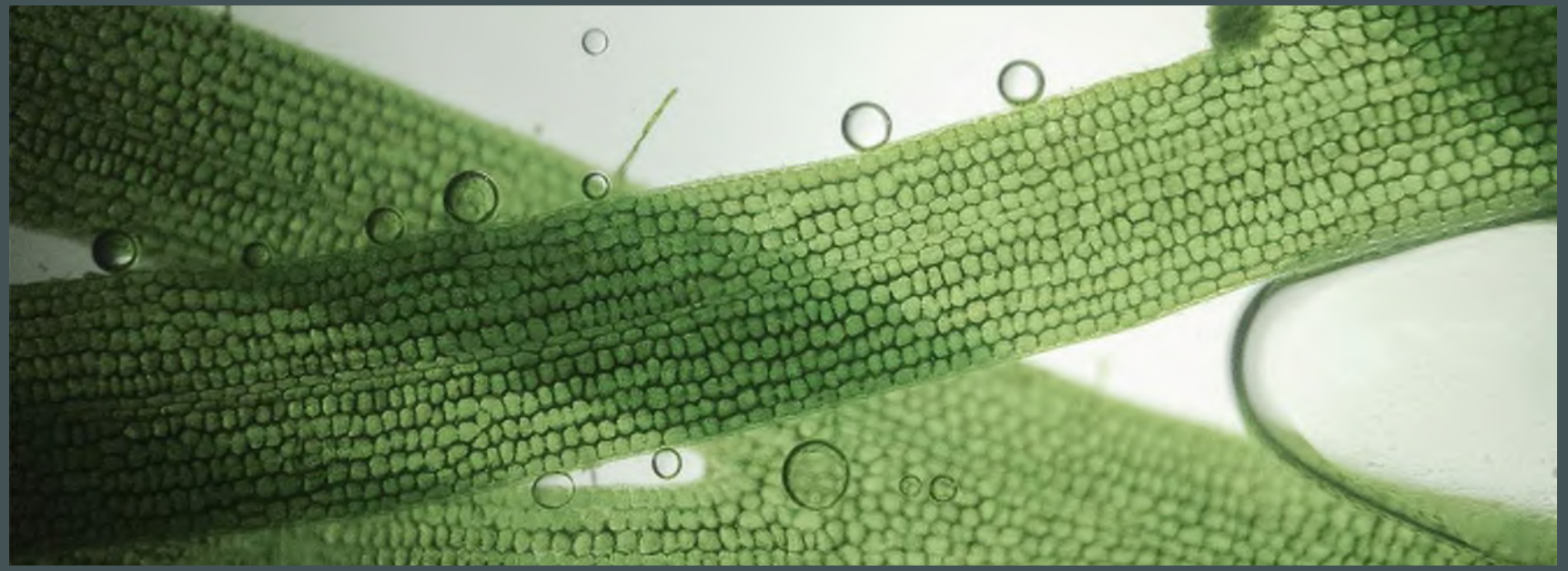
The big picture

1



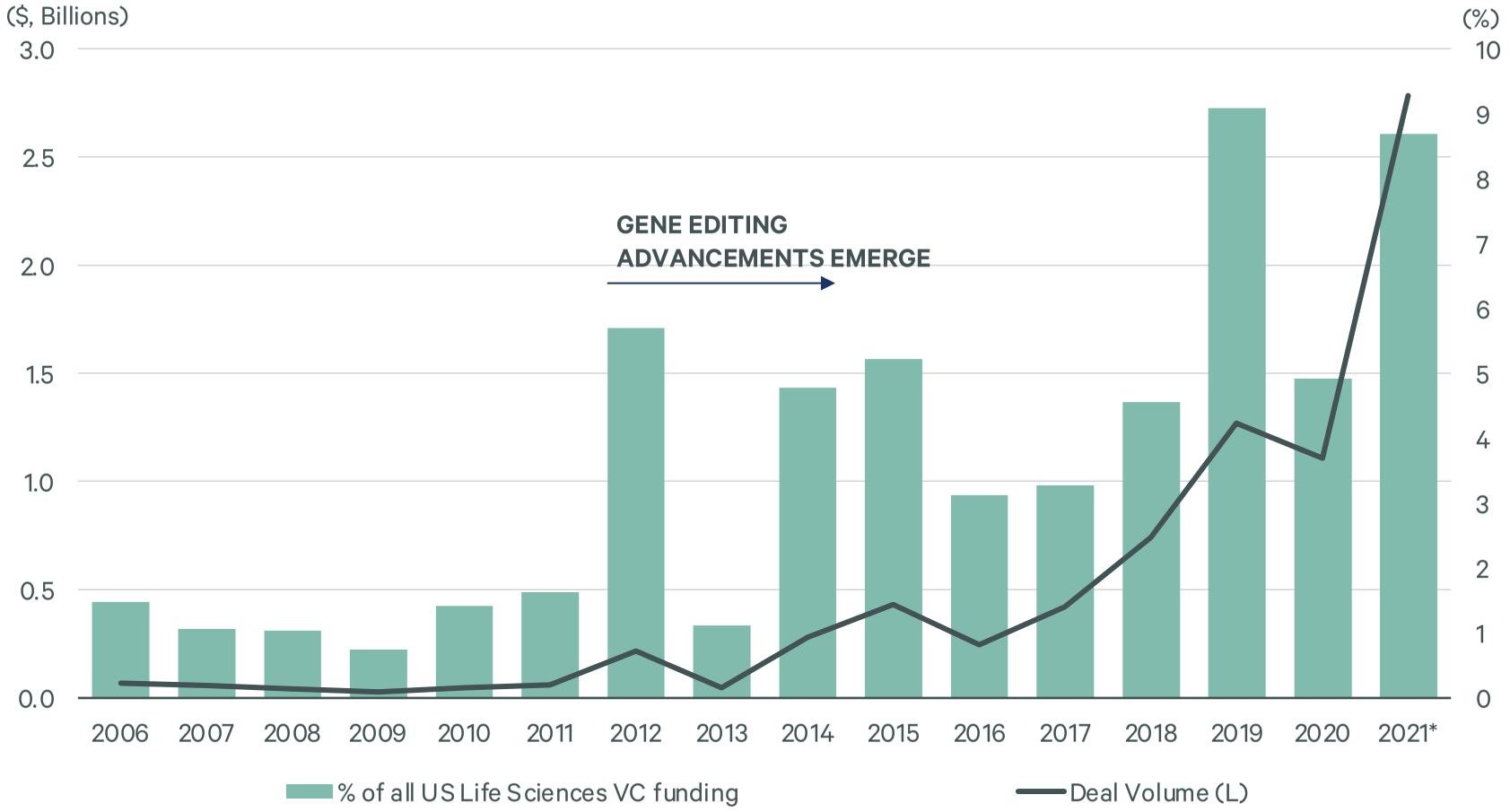
“If the 20th century was the century of physics, the 21st century will be the century of biology.”

Geneticists
J. Craig Venter and Daniel Cohen
1997



The genomics revolution has begun

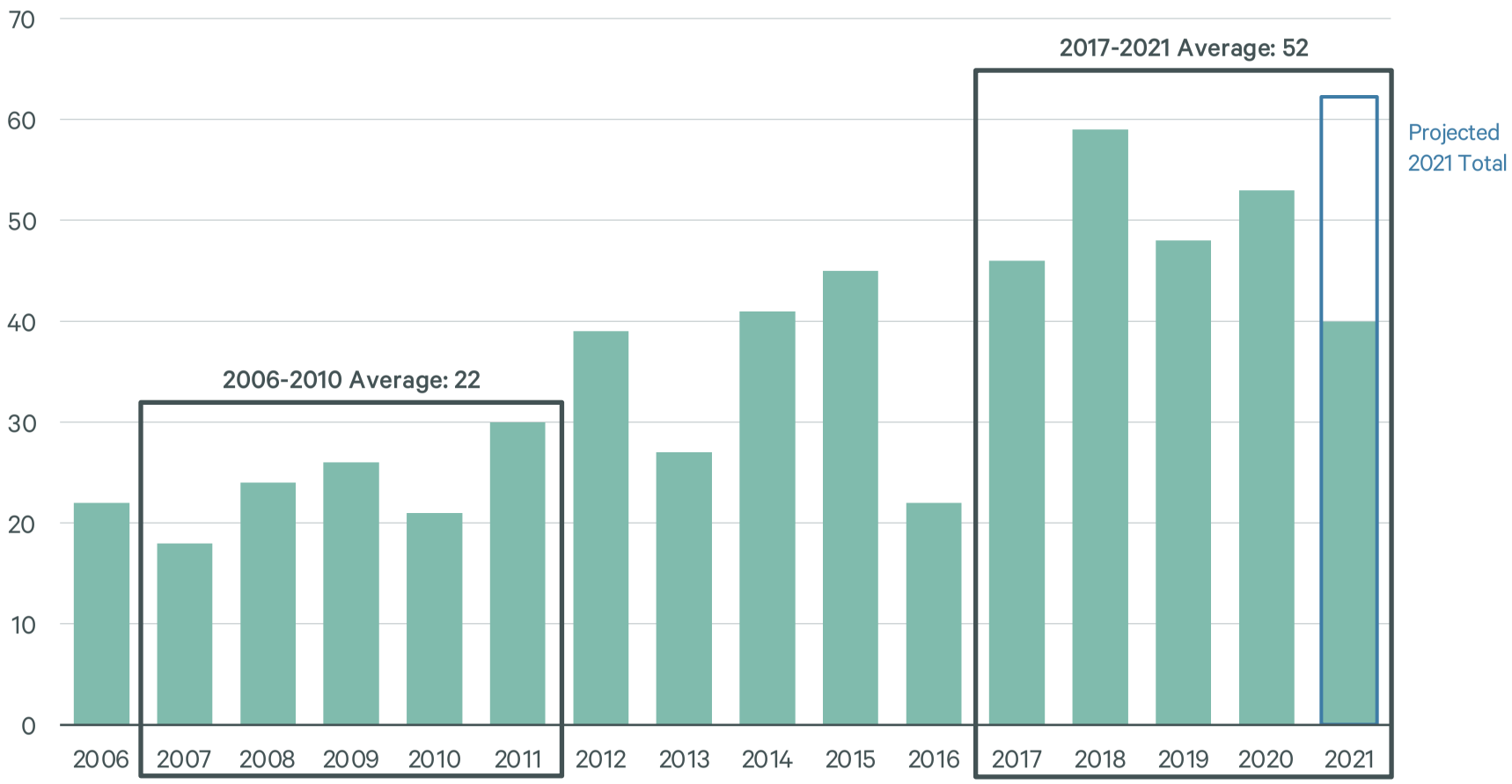
U.S. Venture Capital Investments in Companies Specializing in Gene Therapy and Gene Editing



Source: CB Insights, CBRE Research, Q4 2021. *2021 data is last four quarters through Q3 2021.

An acceleration in life sciences discovery and innovation

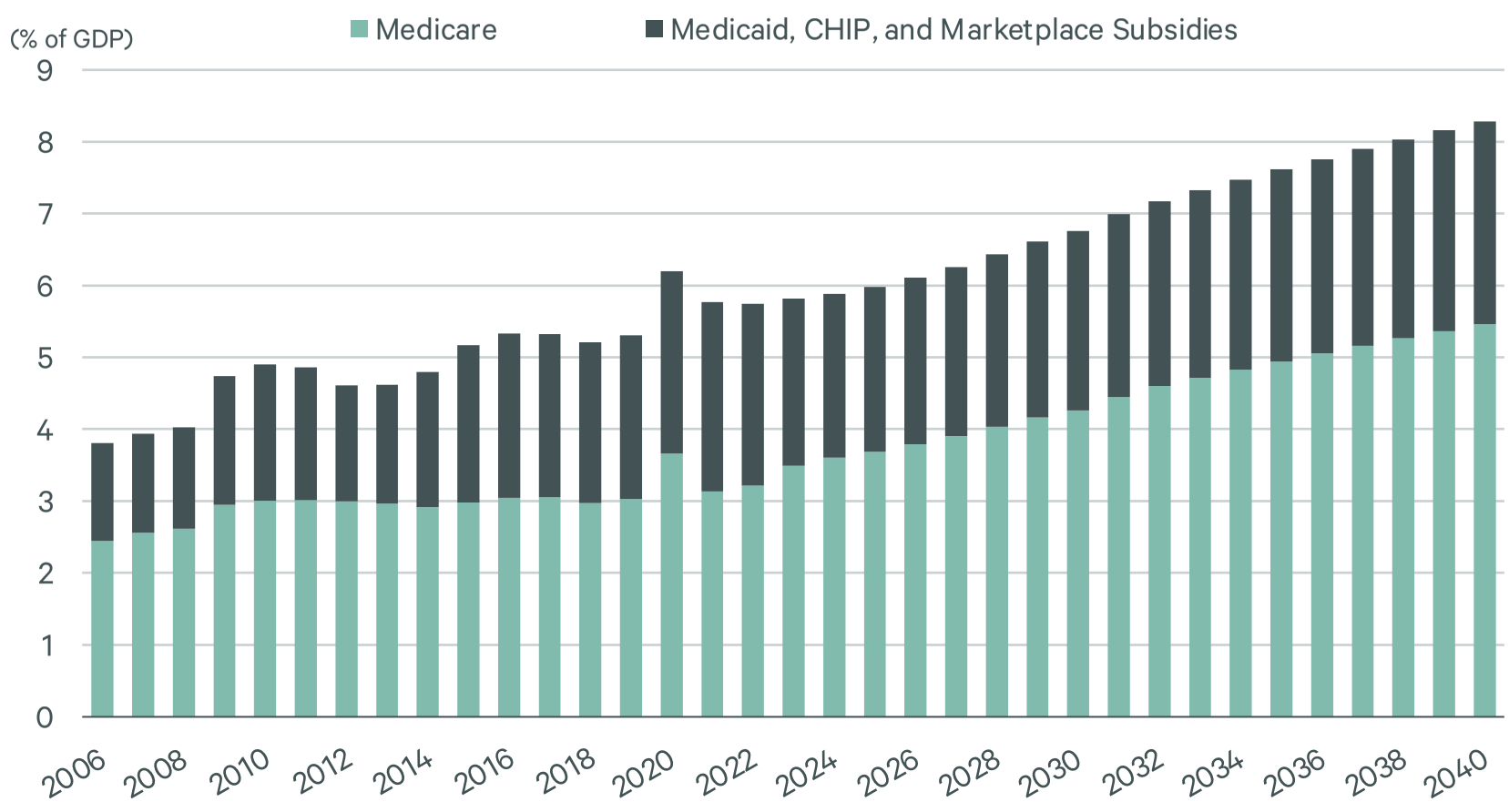
Novel Drug Approvals by the FDA (count)



Source: FDA, CBRE Research, Q4 2021.

Driven by soaring health-care costs and an aging global population

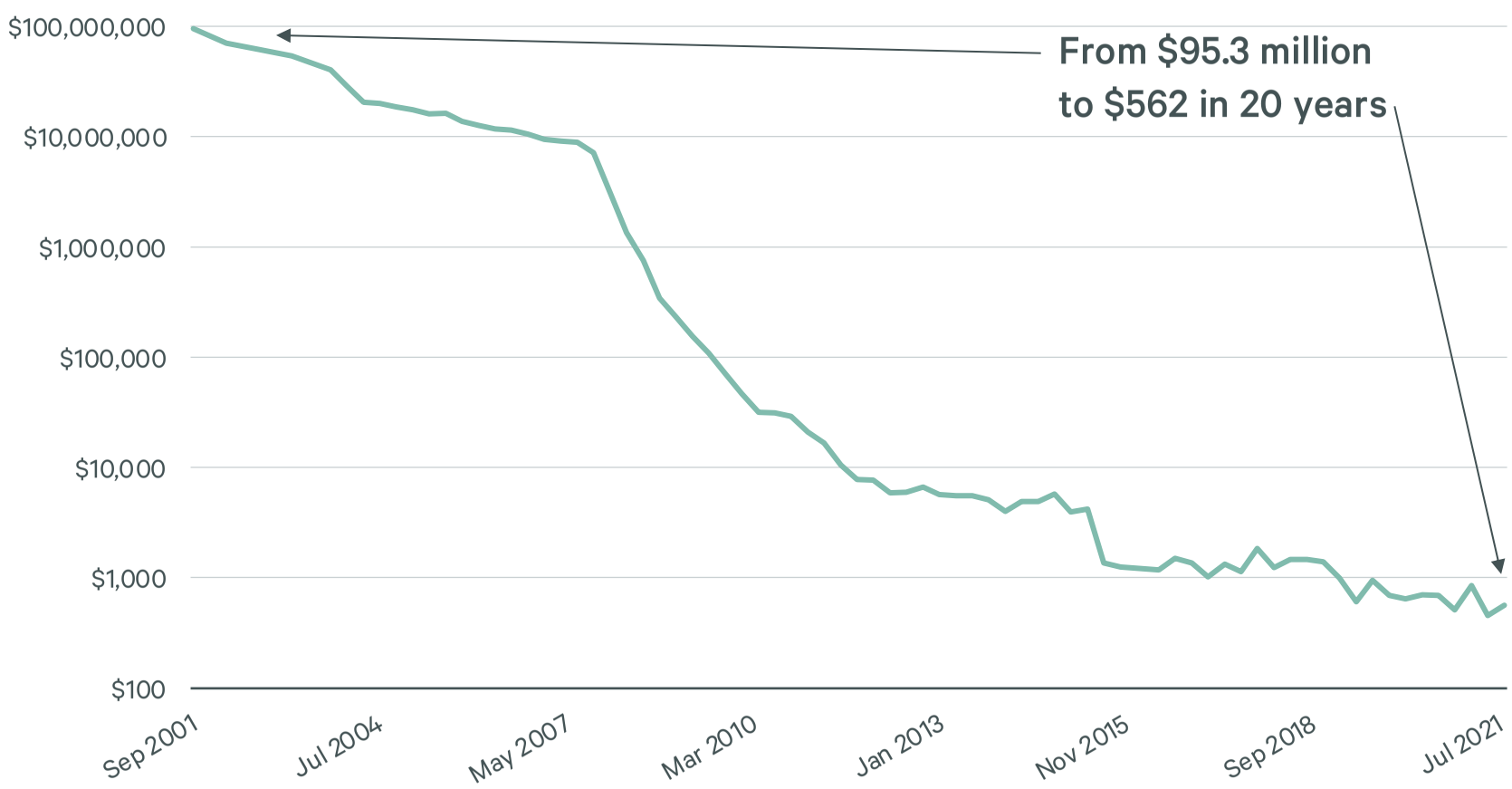
U.S. Federal Outlays for the Major Health Care Programs



Source: Congressional Budget Office, The 2021 Long-Term Budget Outlook, Q4 2021.

Facilitated by massive technological advancements

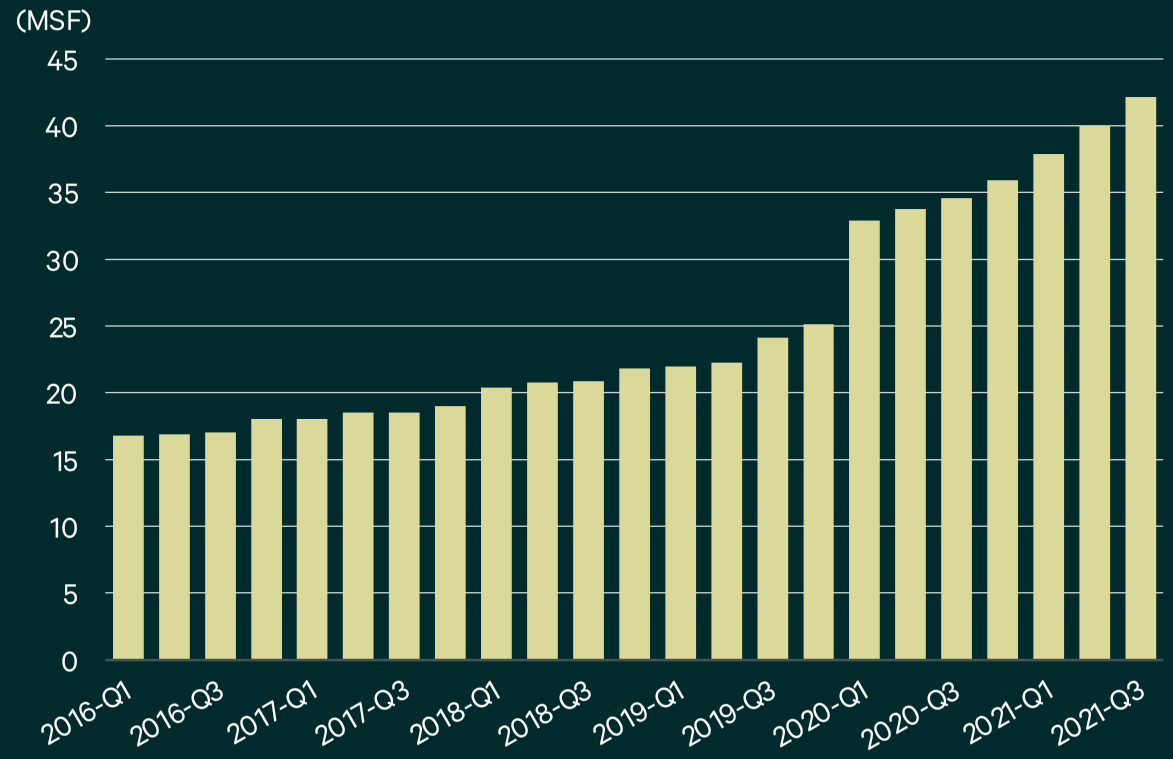
Cost to Sequence the Human Genome



Source: NHGRI Genome Sequencing Program, November 2021.

THE BIG PICTURE

Boston-Cambridge's lab inventory has doubled in three years by ~20 MSF



Source: CBRE Research, Q4 2021.

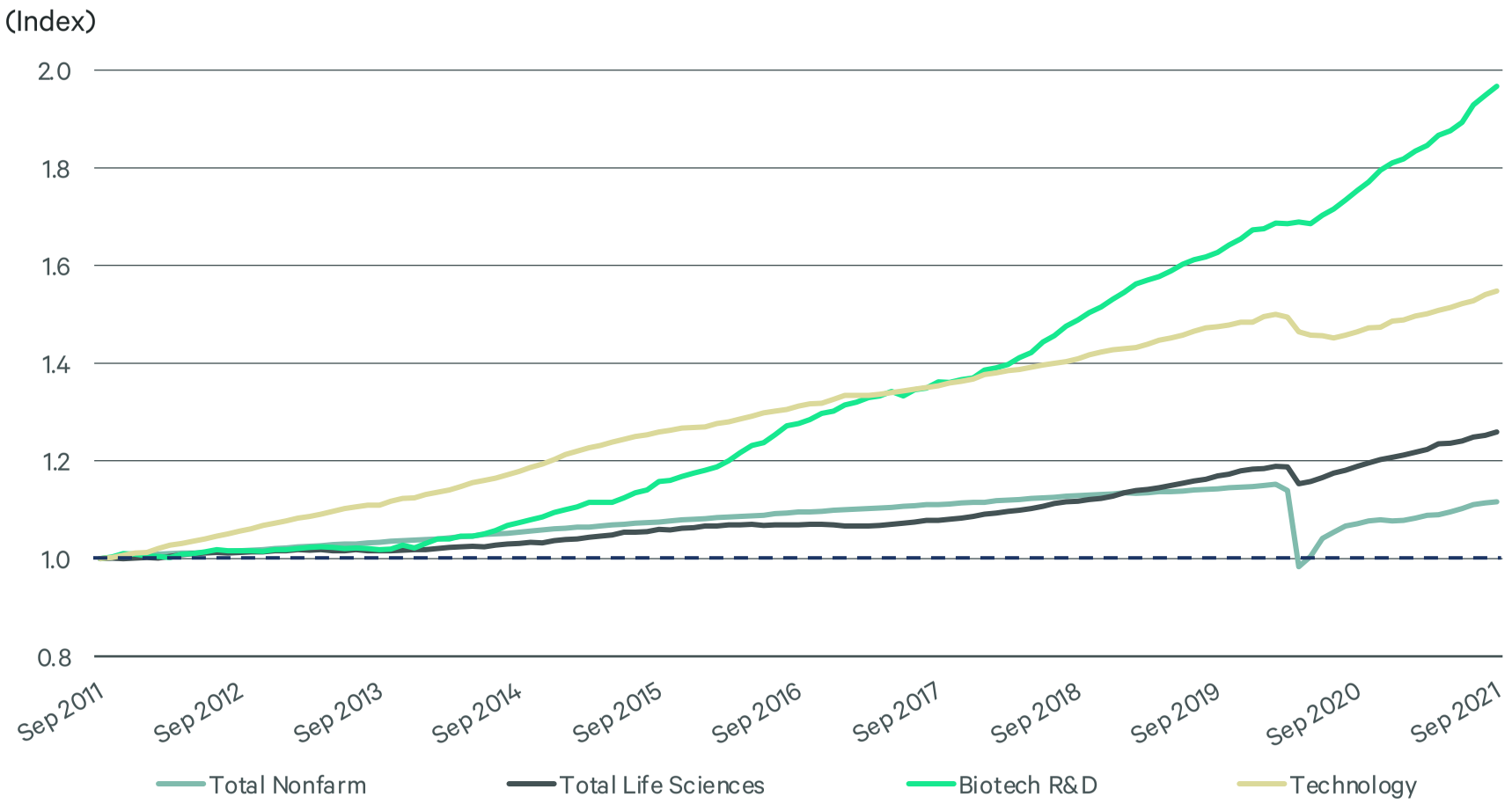
Image: Les Vants

The jobs boom

2

Life sciences now a leading source of U.S. employment growth

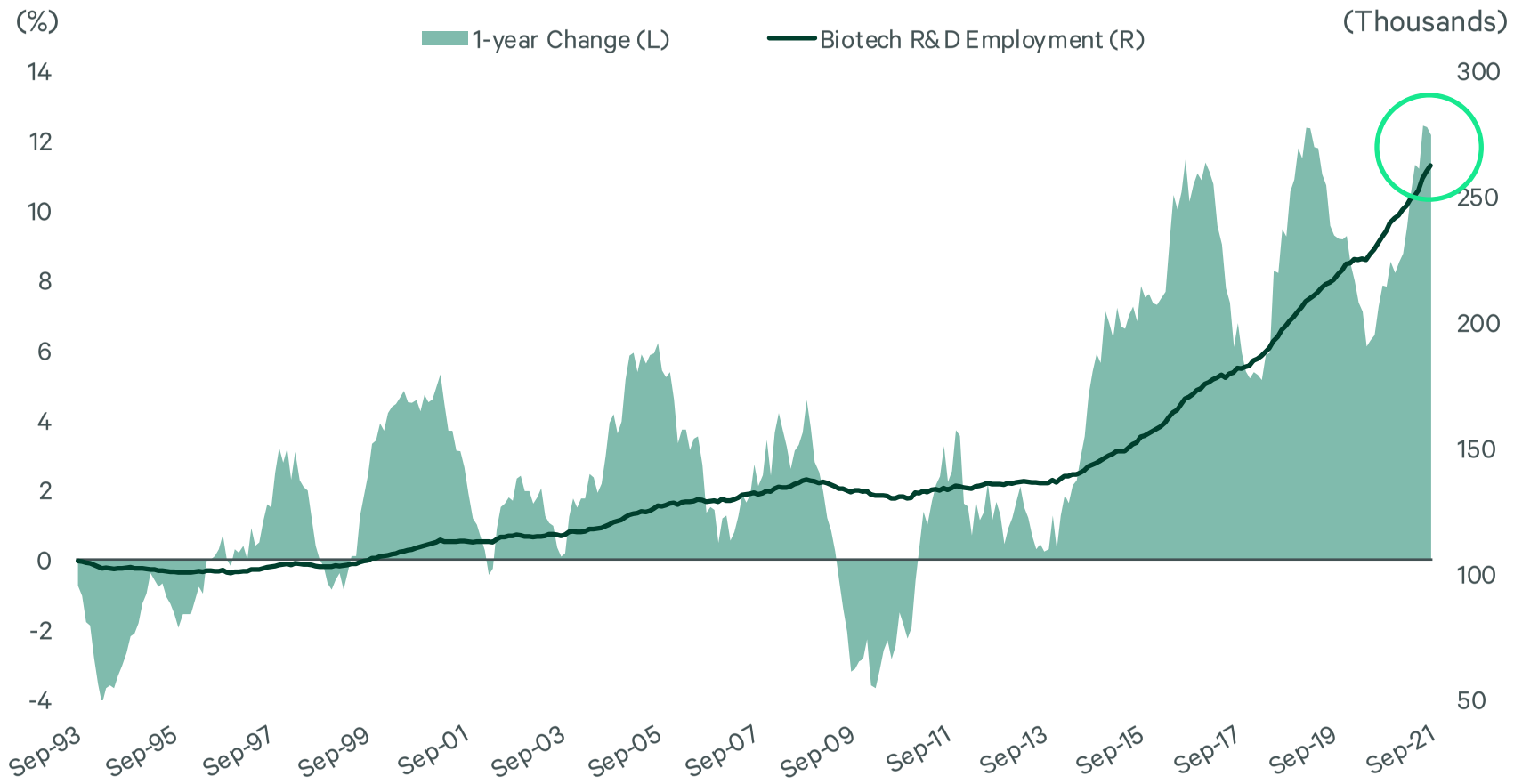
U.S. Employment Growth by Segment (indexed to 1.0 in September 2011)



Source: CBRE Research, US BLS, Q4 2021.

Biotechnology R&D jobs are growing at their fastest pace on record

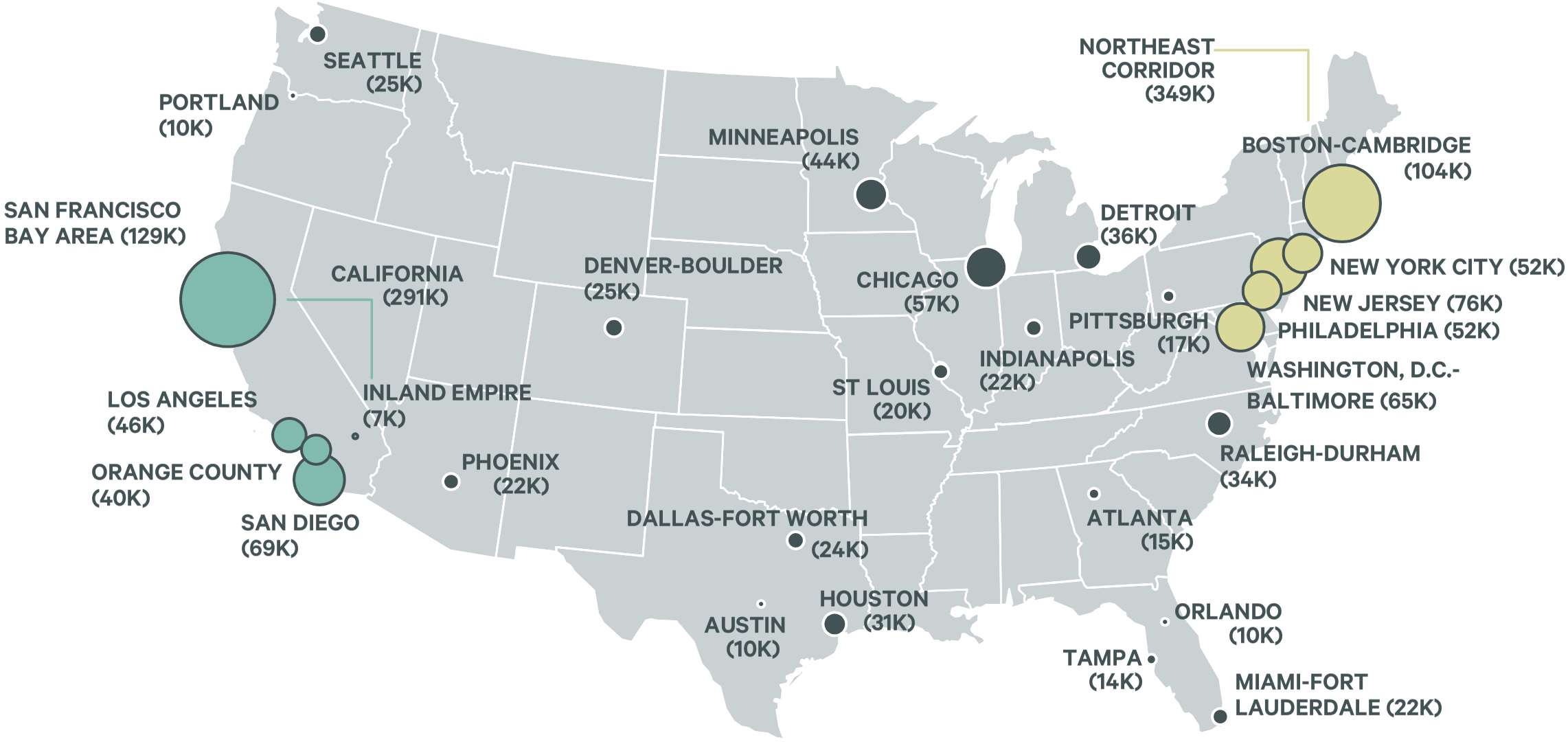
U.S. Biotechnology R&D Employment



Source: CBRE Research, US BLS, Q4 2021.

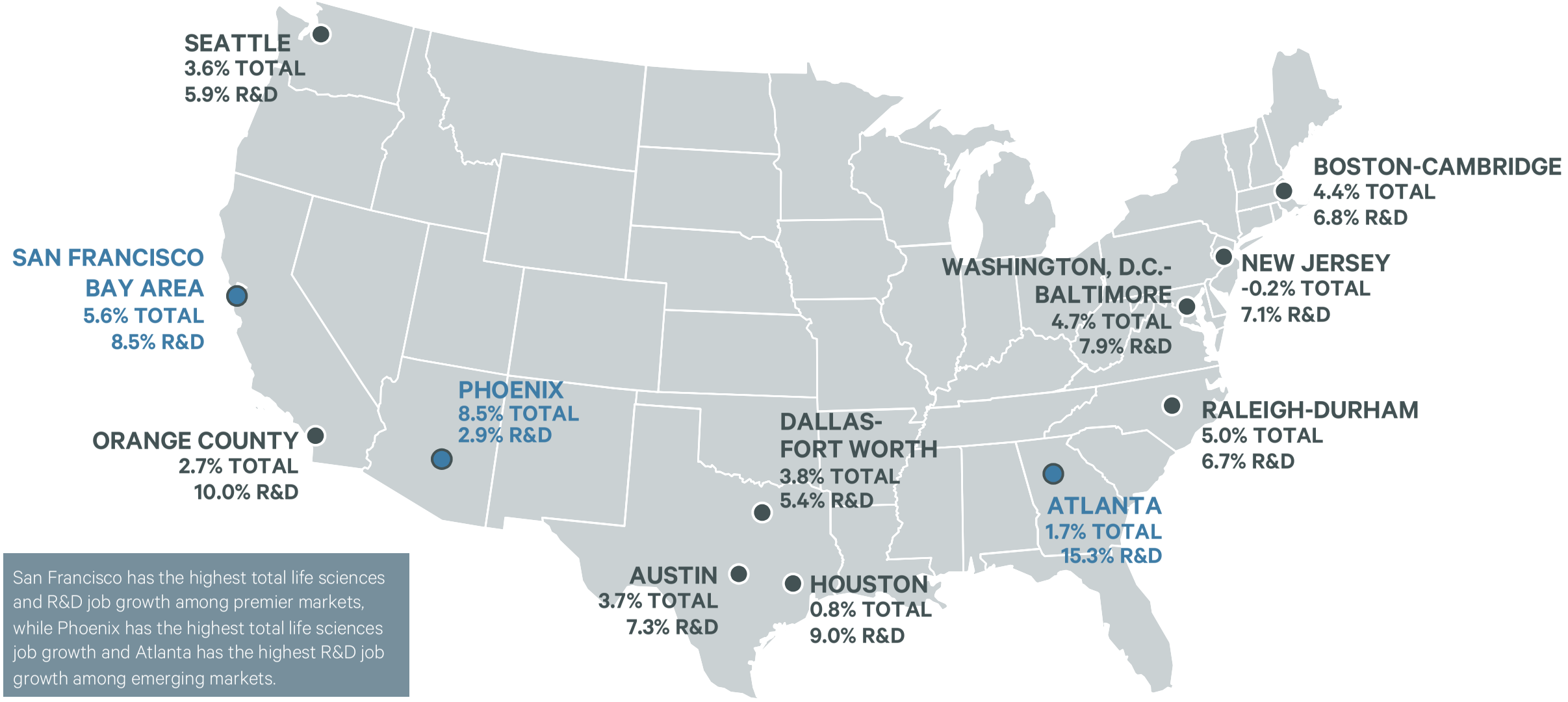
The largest life sciences hubs by employment

Total life sciences employment (2020)



Strongest life sciences job growth

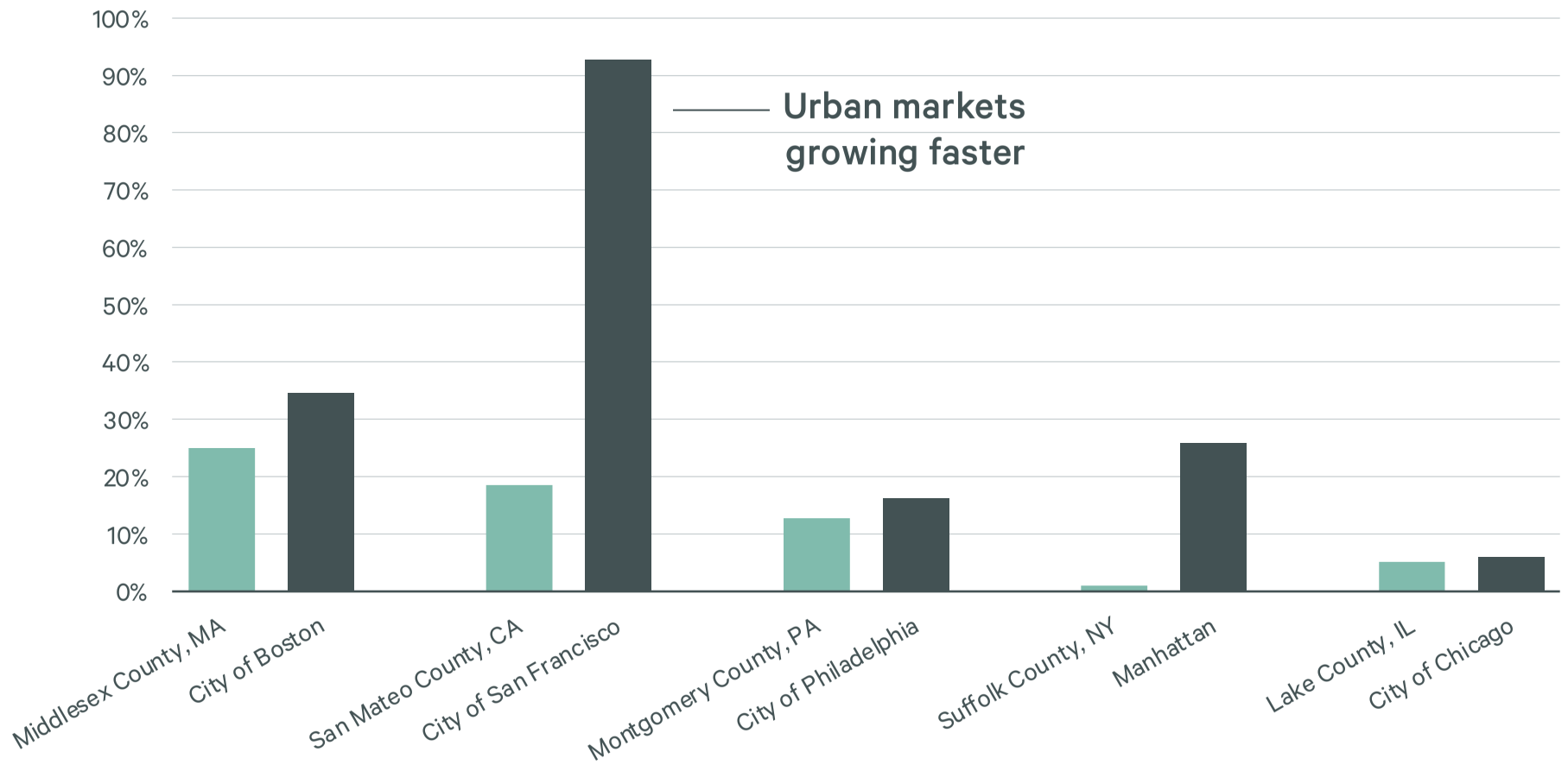
Life sciences clusters with above-average total life sciences or R&D employment growth between 2019 and 2020.



San Francisco has the highest total life sciences and R&D job growth among premier markets, while Phoenix has the highest total life sciences job growth and Atlanta has the highest R&D job growth among emerging markets.

Urban markets see faster growth

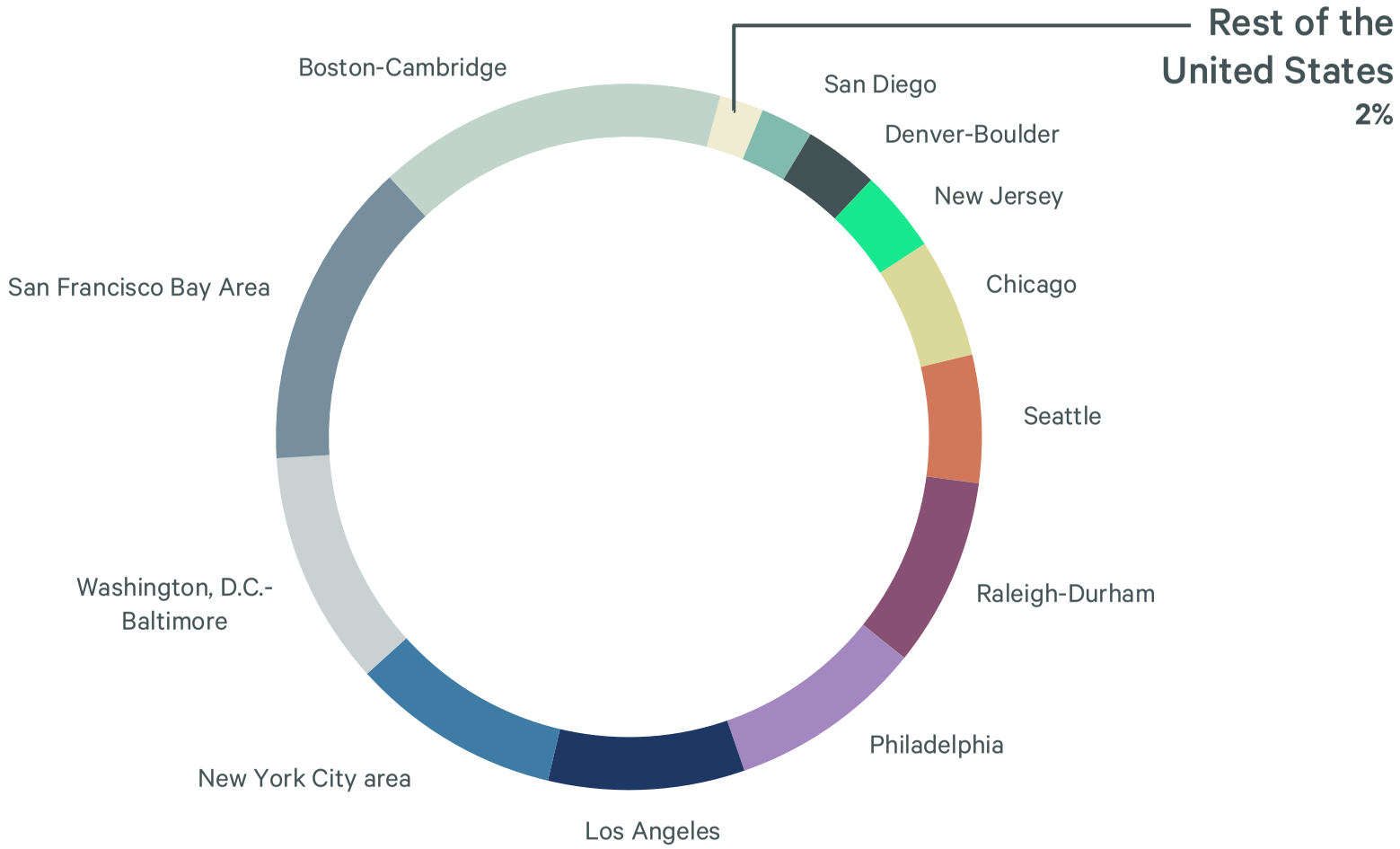
Total Life Sciences Employment Change (2017-2020)



Source: CBRE Research, US BLS, Q4 2021.

98% of specialty life sciences PhDs are granted in the top 12 U.S. clusters

Share of Life Sciences 'Speciality' PhDs by Market



Source: CBRE Research, Degrees in Cell/Cellular Biology and Anatomical Sciences, Microbiological Sciences and Immunology, Genetics, Biomathematics Bioinformatics and Computational Biology, Biotechnology, Biochemistry Biophysics and Molecular Biology, Biomedical/Medical Engineering, Biochemical Engineering, Biological/Biosystems Engineering.

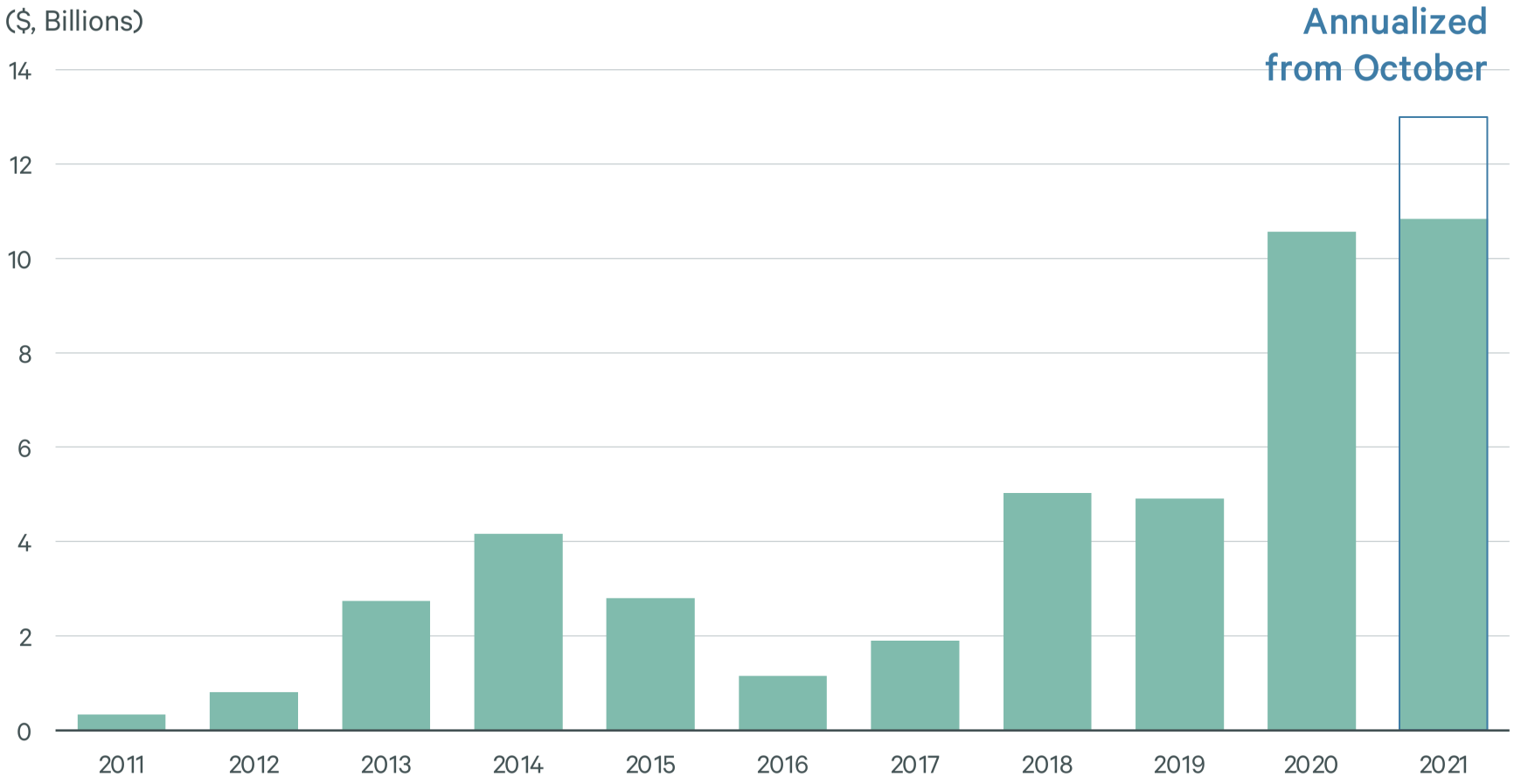
Abundant capital

3

Historic amounts of funding are fueling life sciences expansion

Life Sciences IPOs

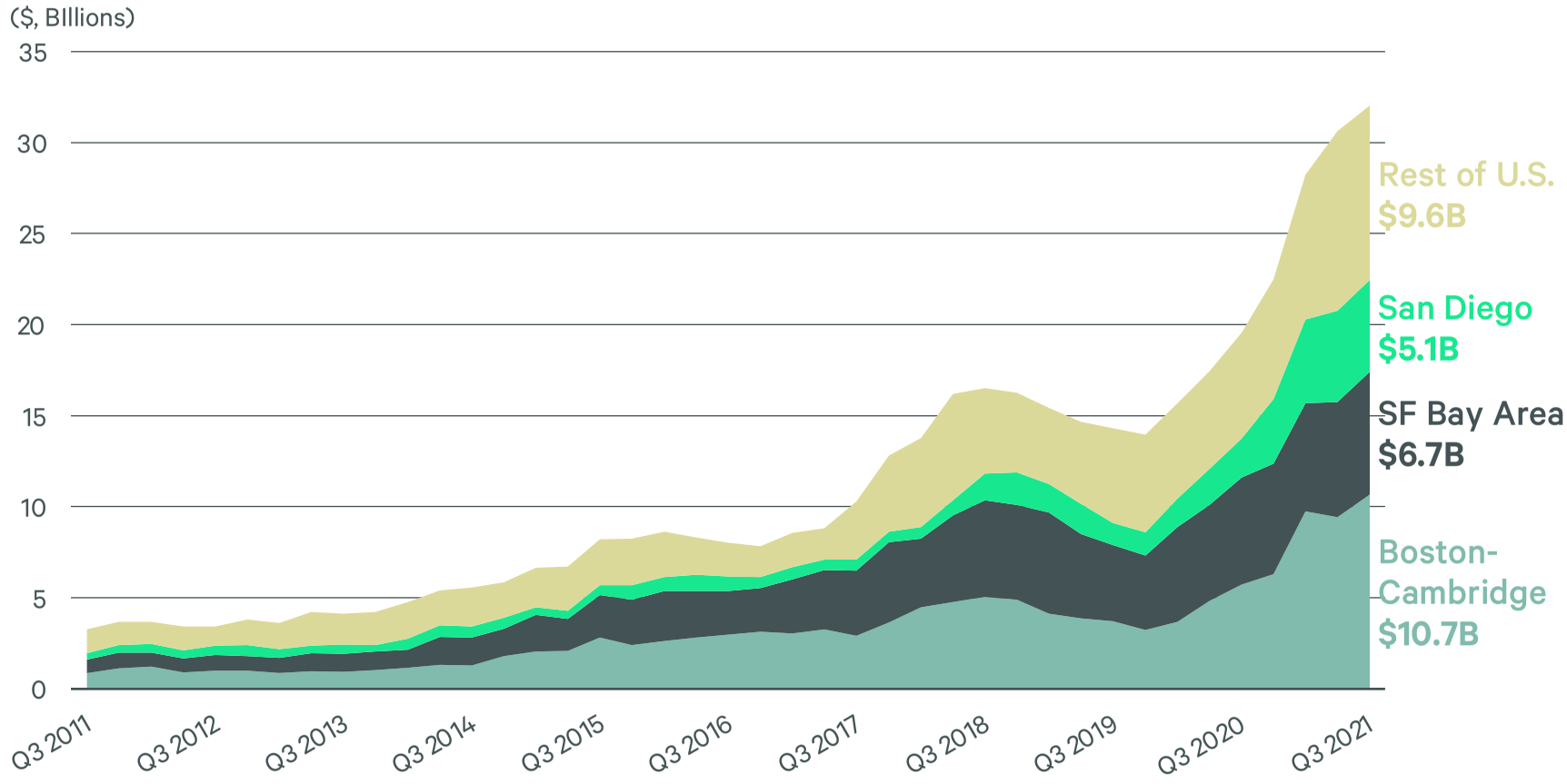
Sum of deal sizes



Source: CB Insights, CBRE Research, Q4 2021.

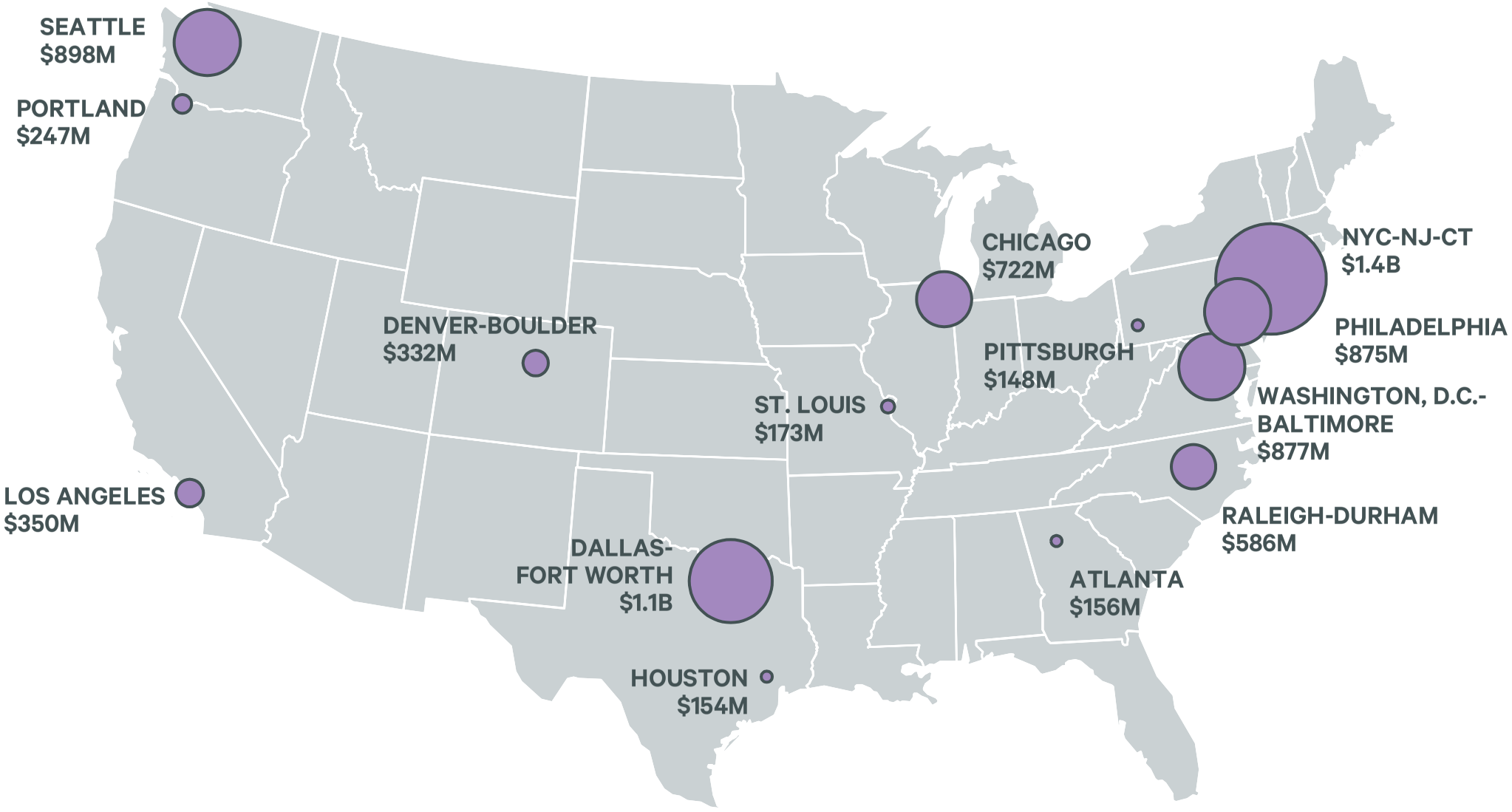
Record venture capital funding – 70% goes to three markets

U.S. Life Sciences Venture Capital Funding



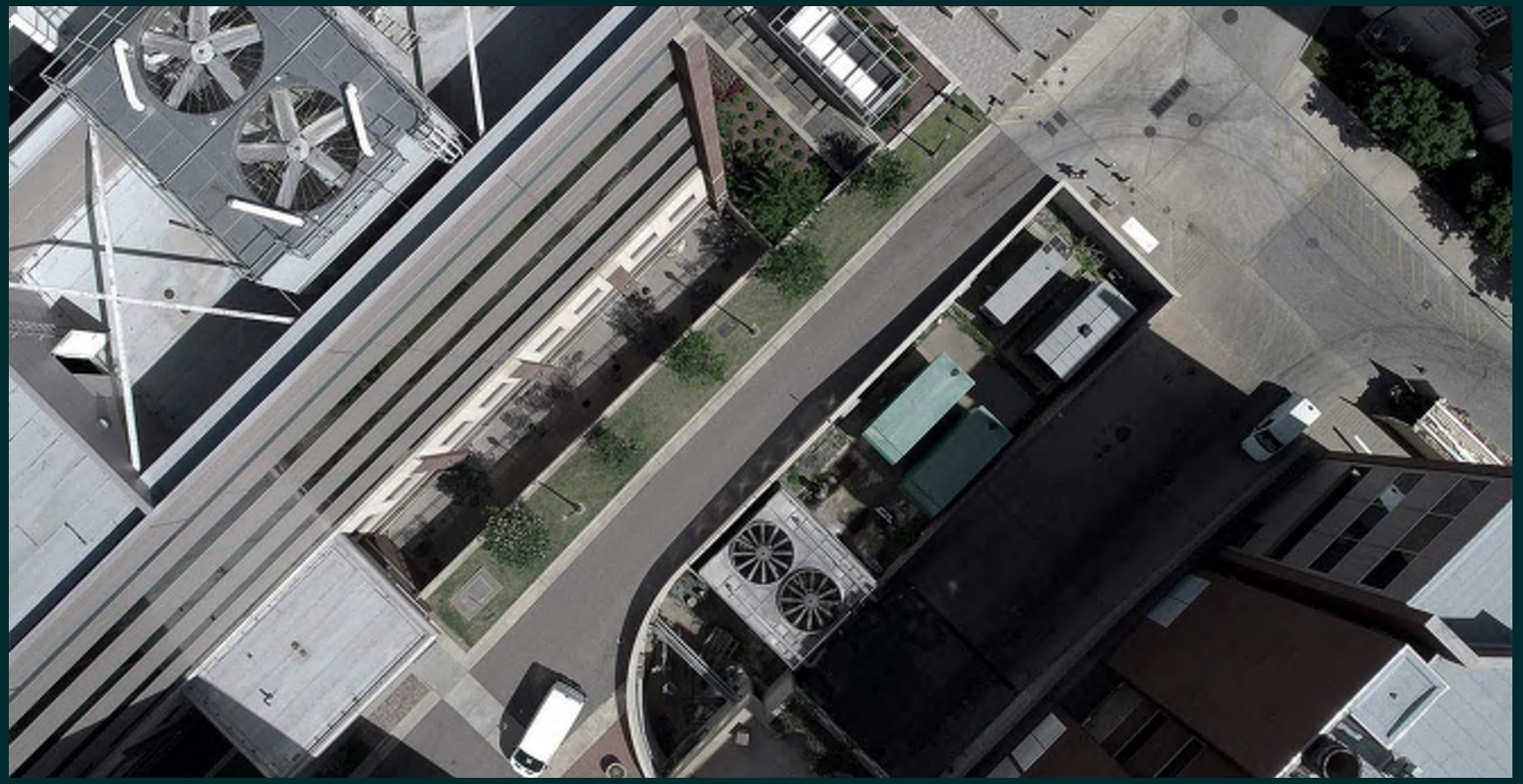
Source: CB Insights, CBRE Research, Annual sum ending Q3 2021.

The “rest of the U.S.” venture capital hot spots



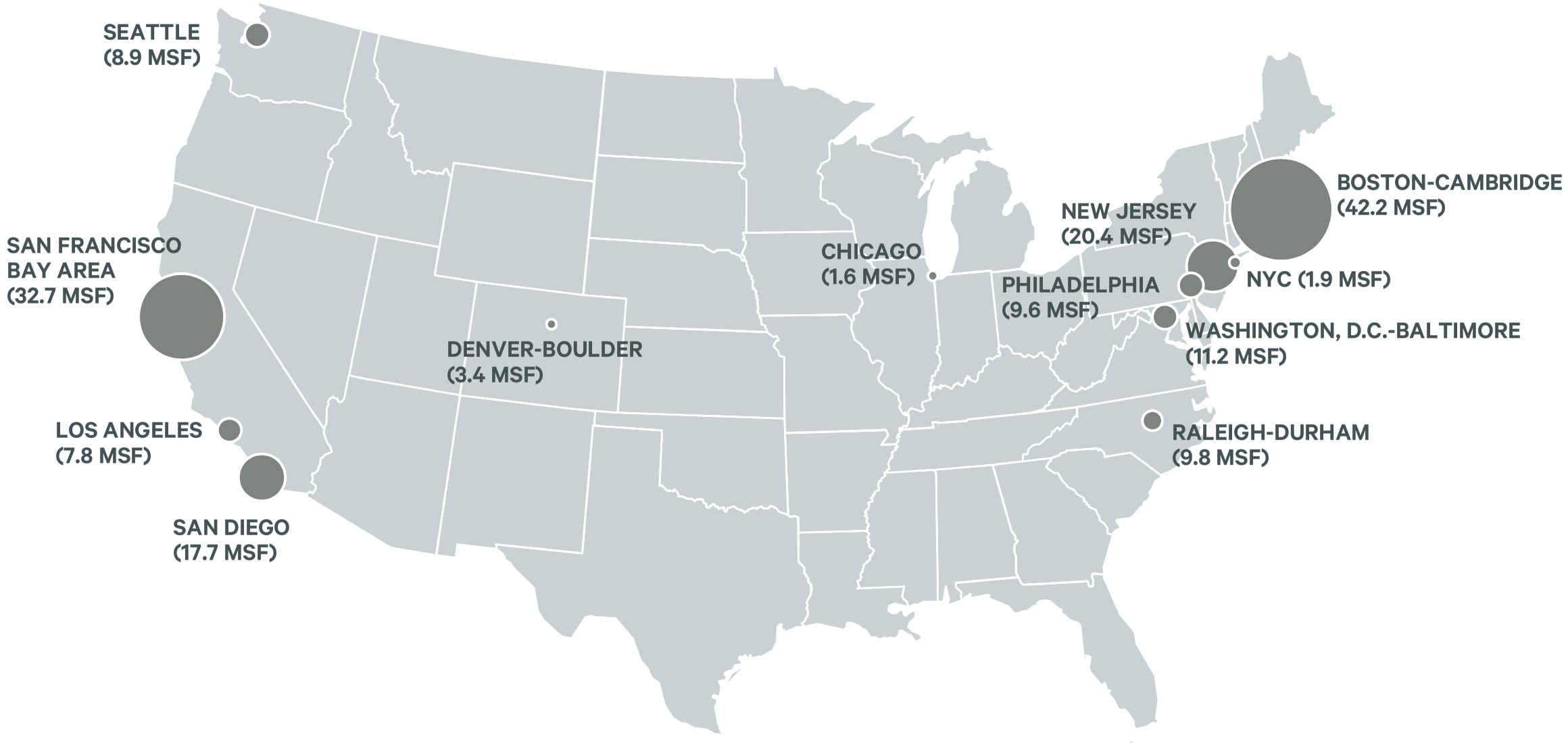
CRE dynamics

3



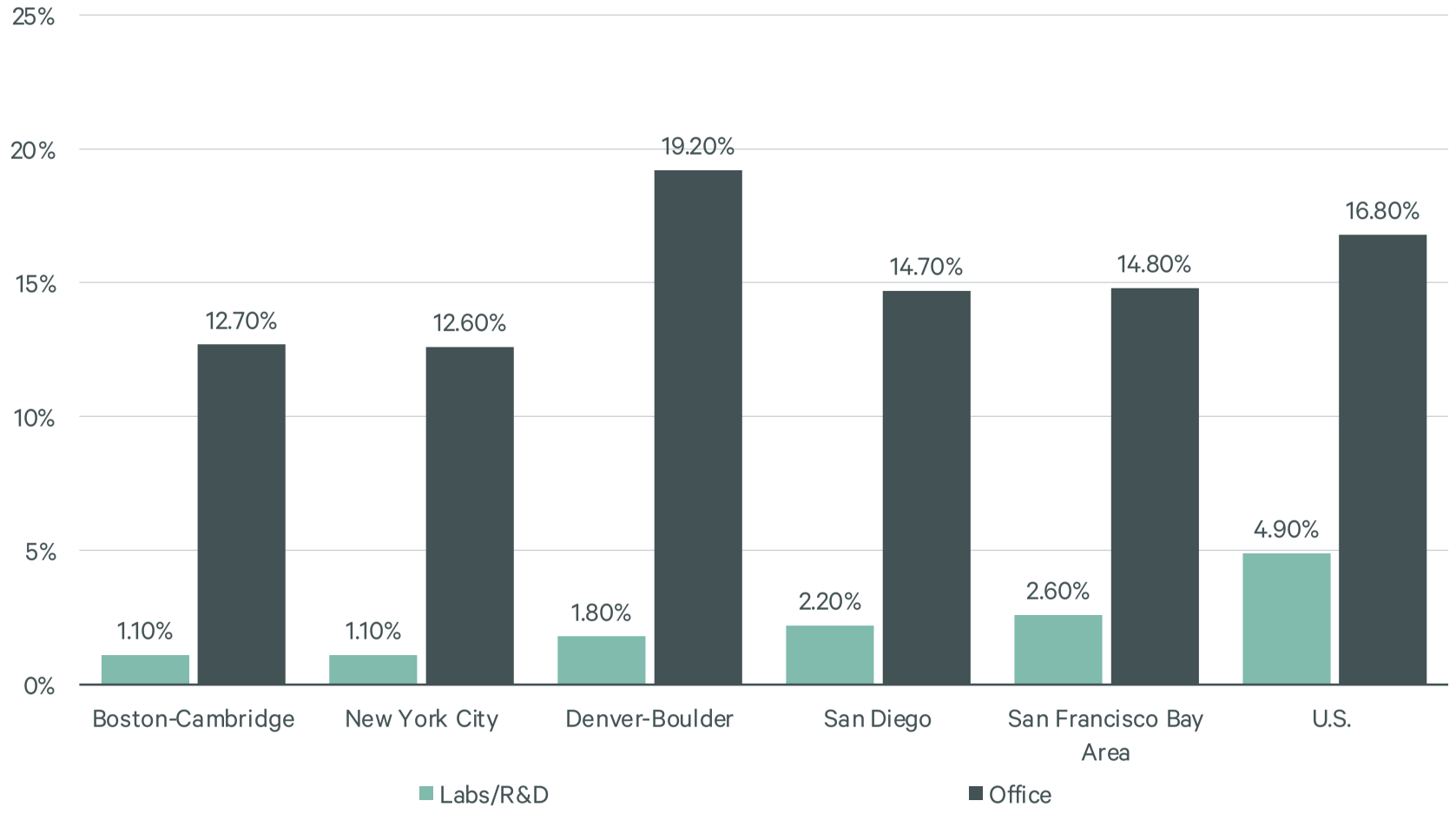
The top life sciences lab/R&D markets

Total Lab/R&D inventory (2021)



Available lab space is at a premium

Q3 2021 Vacancy Rates for Life Sciences Lab/R&D and Conventional Offices



Source: CBRE Research, CBRE EA, Q4 2021. Geographies do not align exactly in most cases.

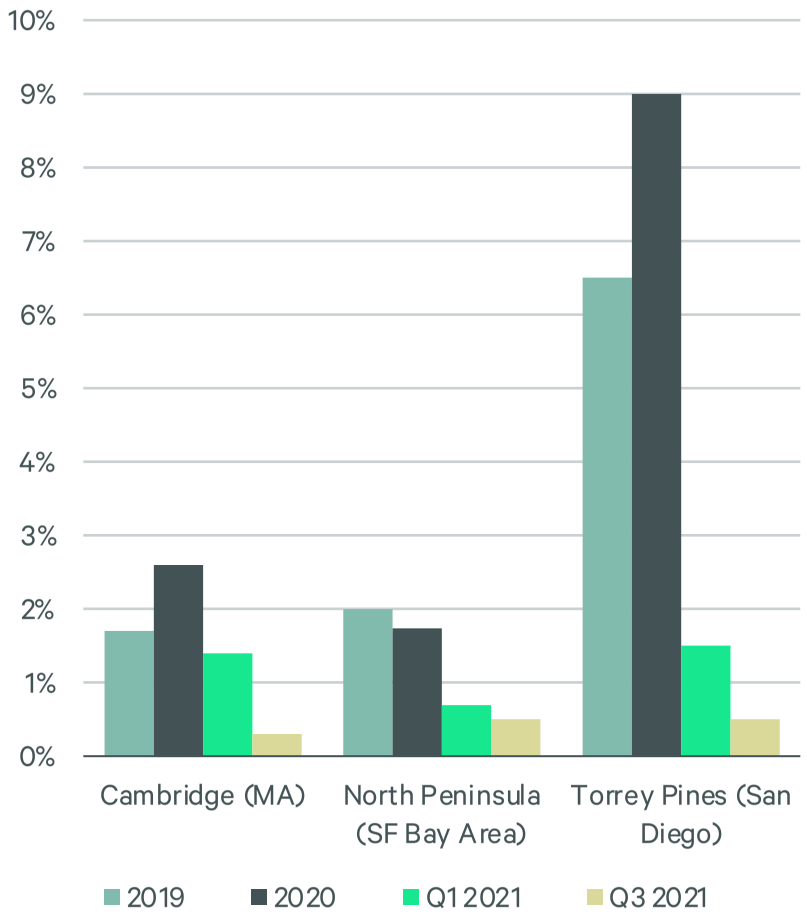
Asking rents broadly rising across the country

Q3 2021 Asking Rents for Lab/R&D Space in Top U.S. Clusters

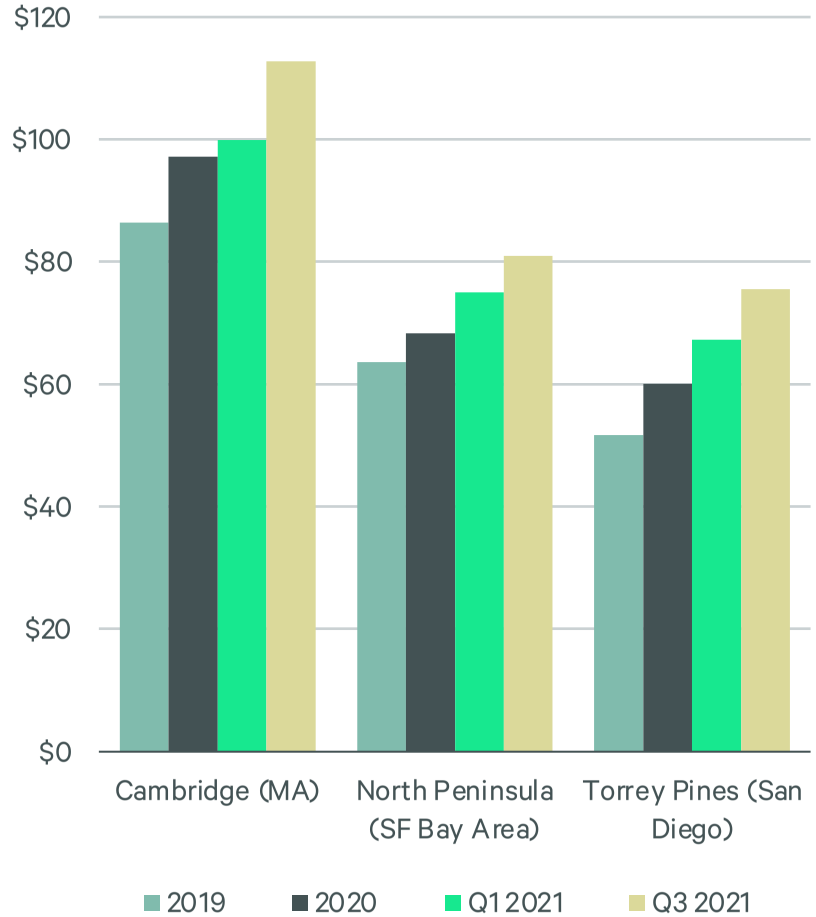
Source: CBRE Research, Q4 2021.

Market conditions are strongest in the nation's premier submarkets

Lab/R&D Vacancy Rates



Average Asking Lab/R&D Rents (NNN)

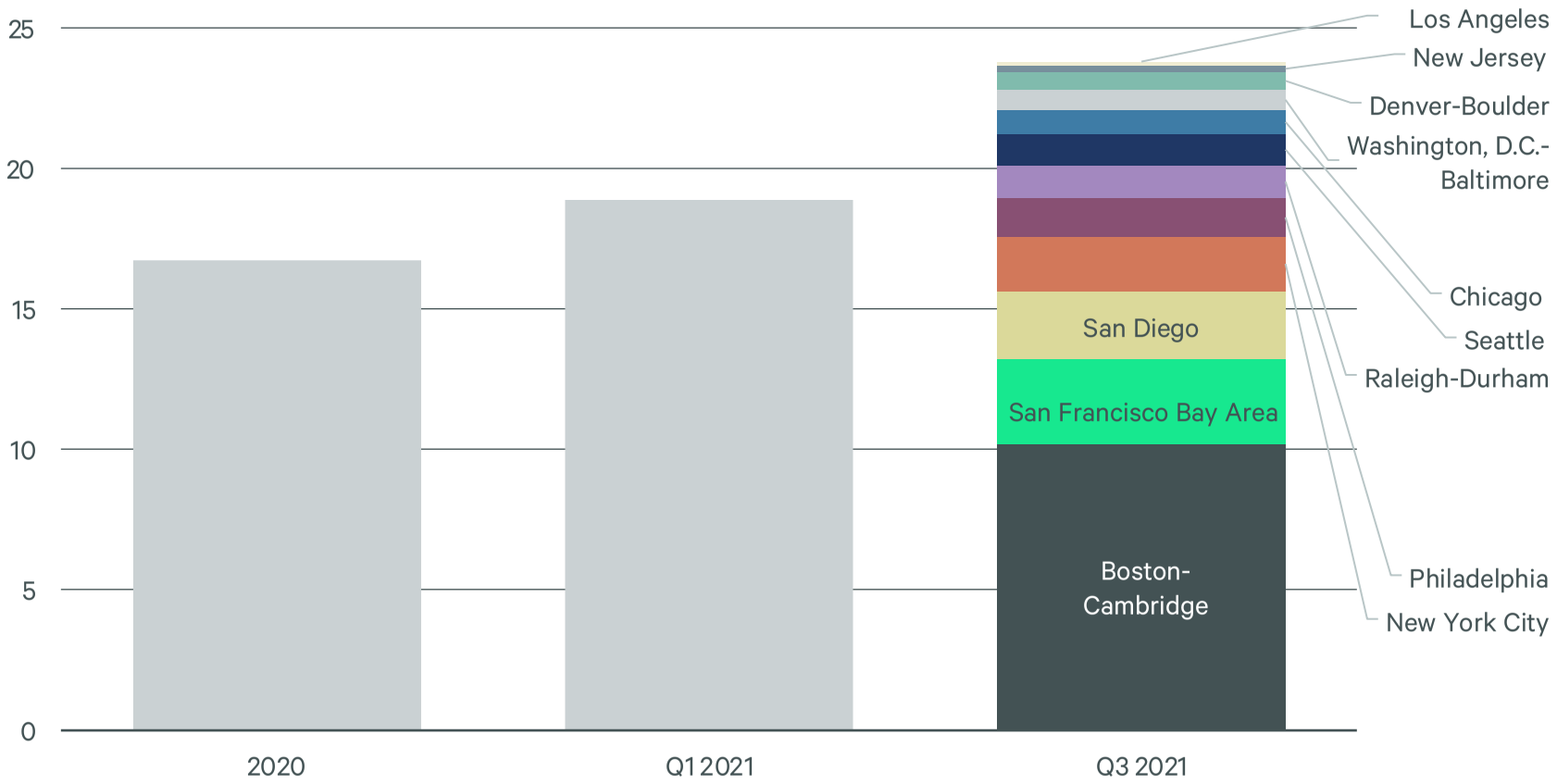


Source: CBRE Research, Q4 2021.

23.8 MSF of labs under construction in Q3 2021

Construction of Life Sciences Lab/R&D Properties

(New development, conversion, speculative and build-to-suit)



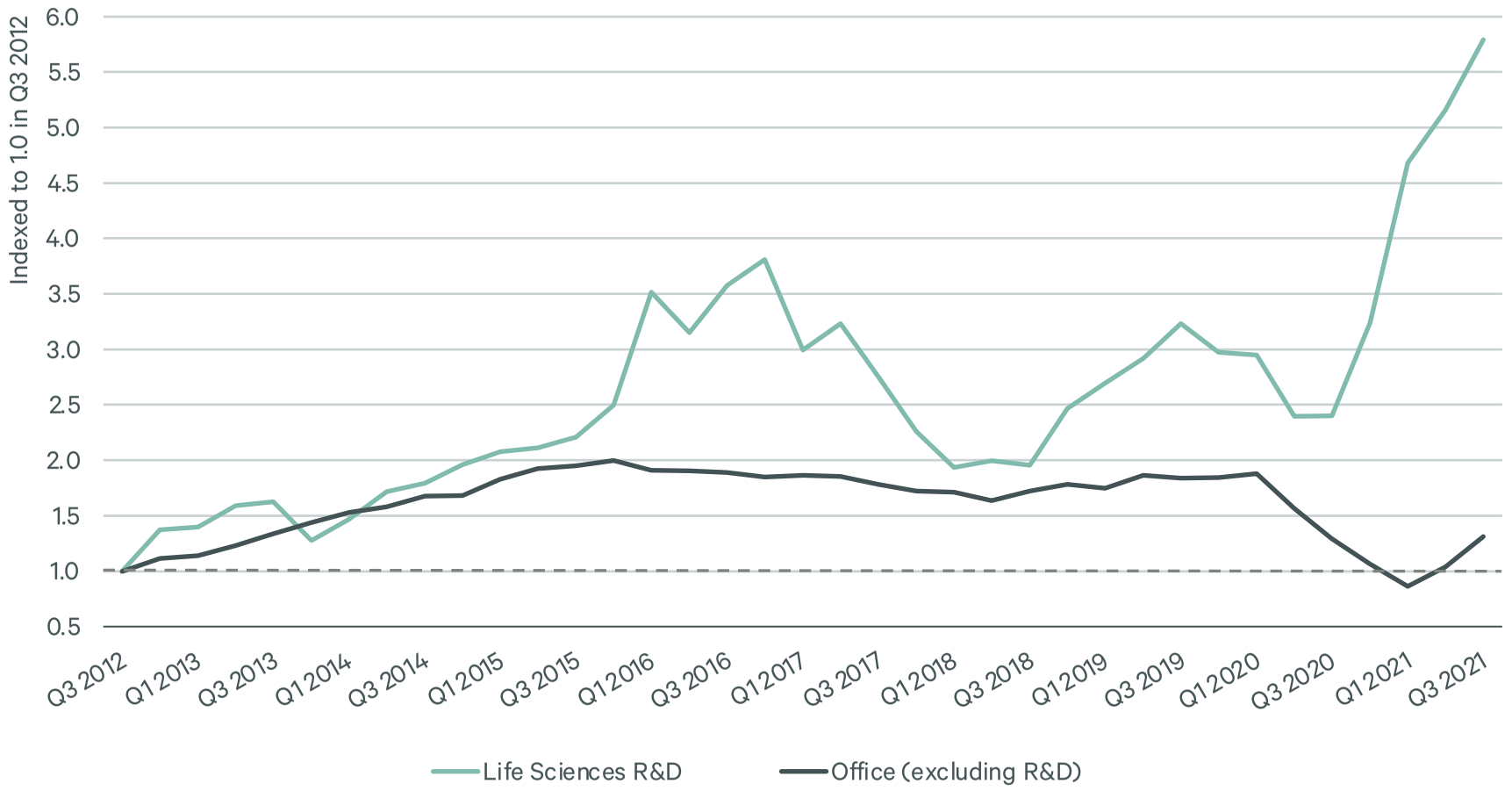
Source: CBRE Research, Q4 2021.

Investment trends

4

Investment in life sciences lab/R&D properties have soared

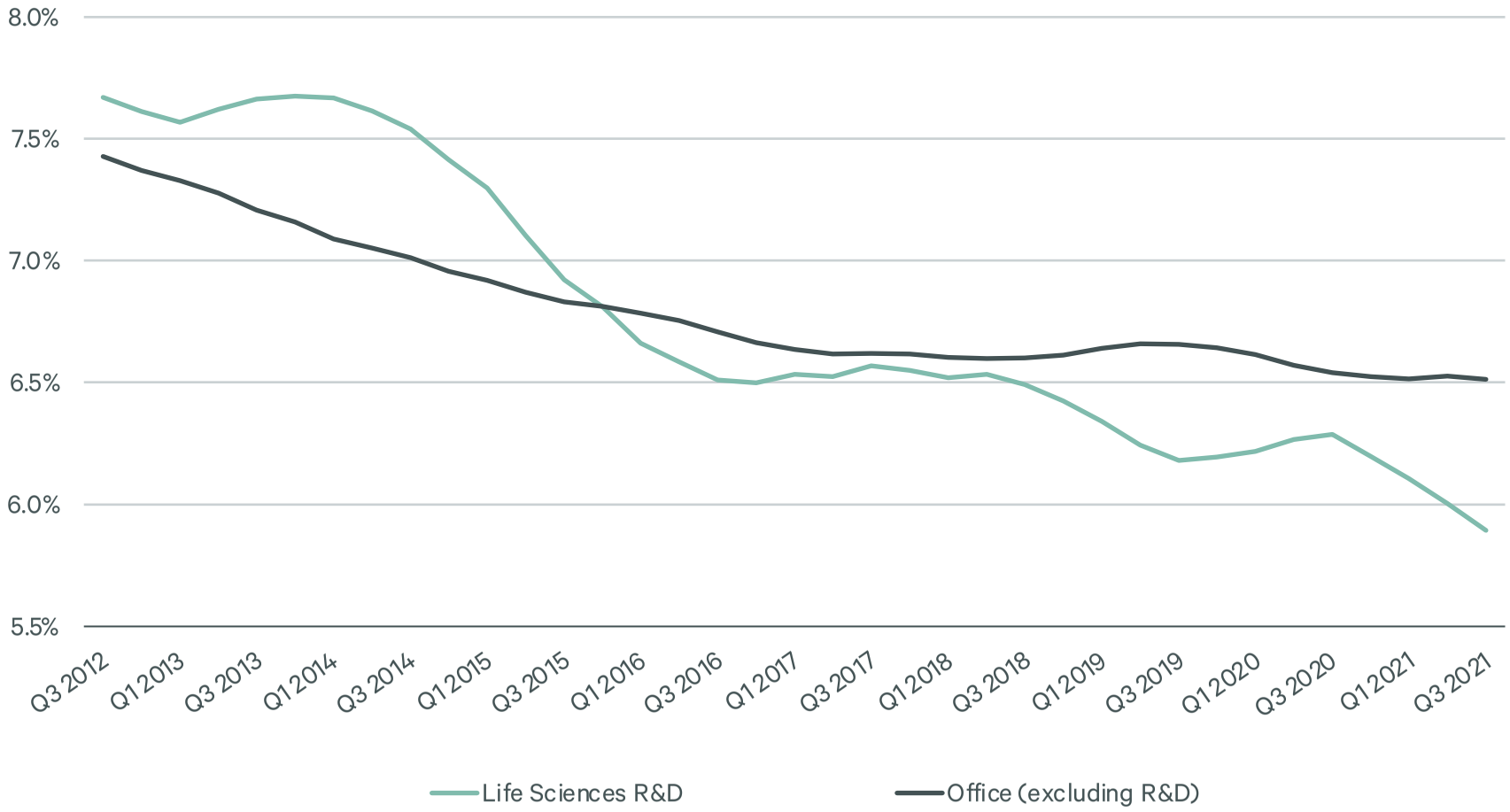
Sales of Life Sciences Lab/R&D and Conventional Offices
(4-qtr. rolling sum indexed to 1.0 in Q3 2012)



Source: Real Capital Analytics, CBRE Research, Q4 2021.

And pricing is as strong as ever

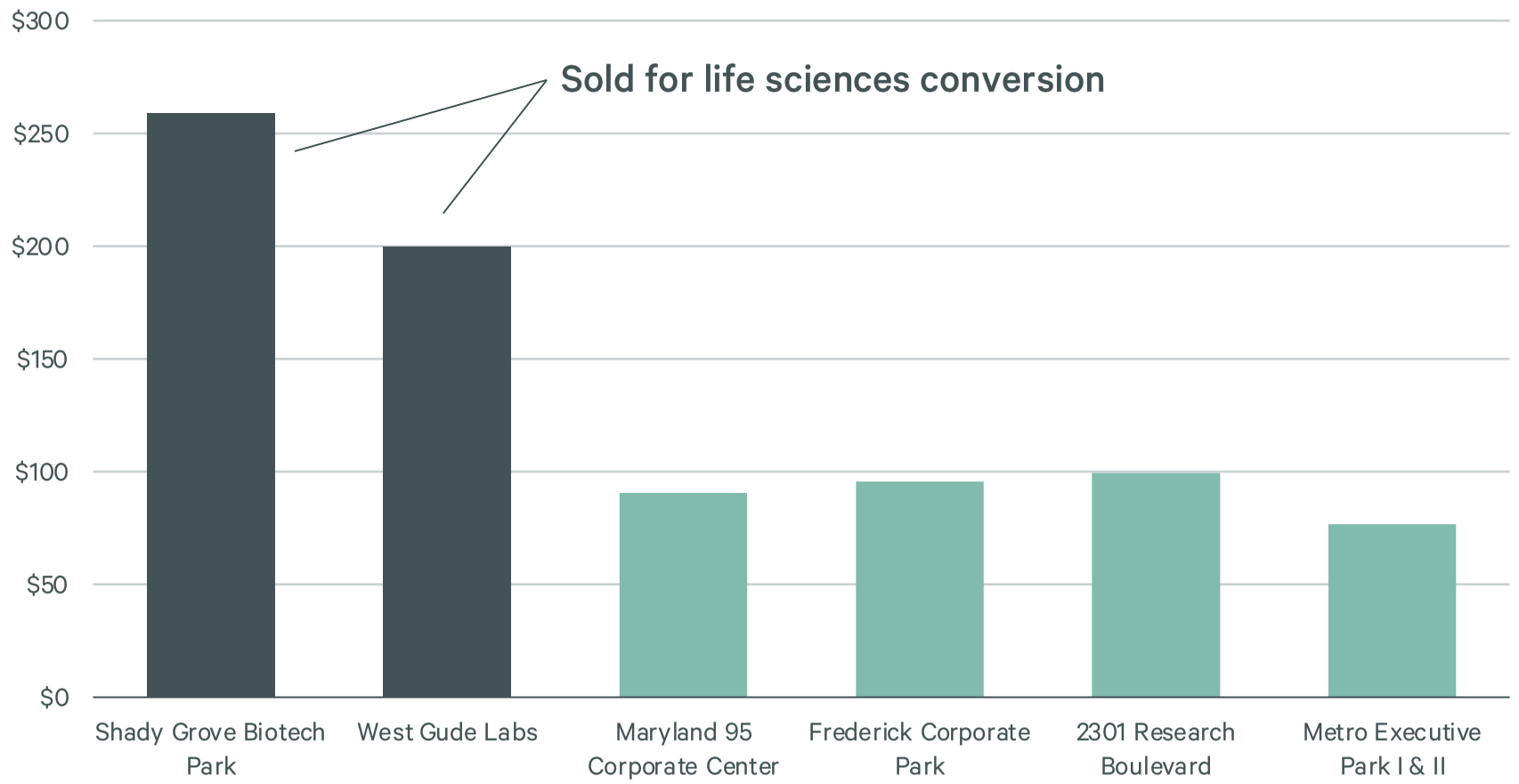
Average Cap Rates
(4-qtr. moving average)



Source: Real Capital Analytics, CBRE Research, Q4 2021.

Office properties converting to labs at premium pricing

Average price per square foot of office properties sold in Suburban Maryland in the past five years with less than 70% occupancy and five floors



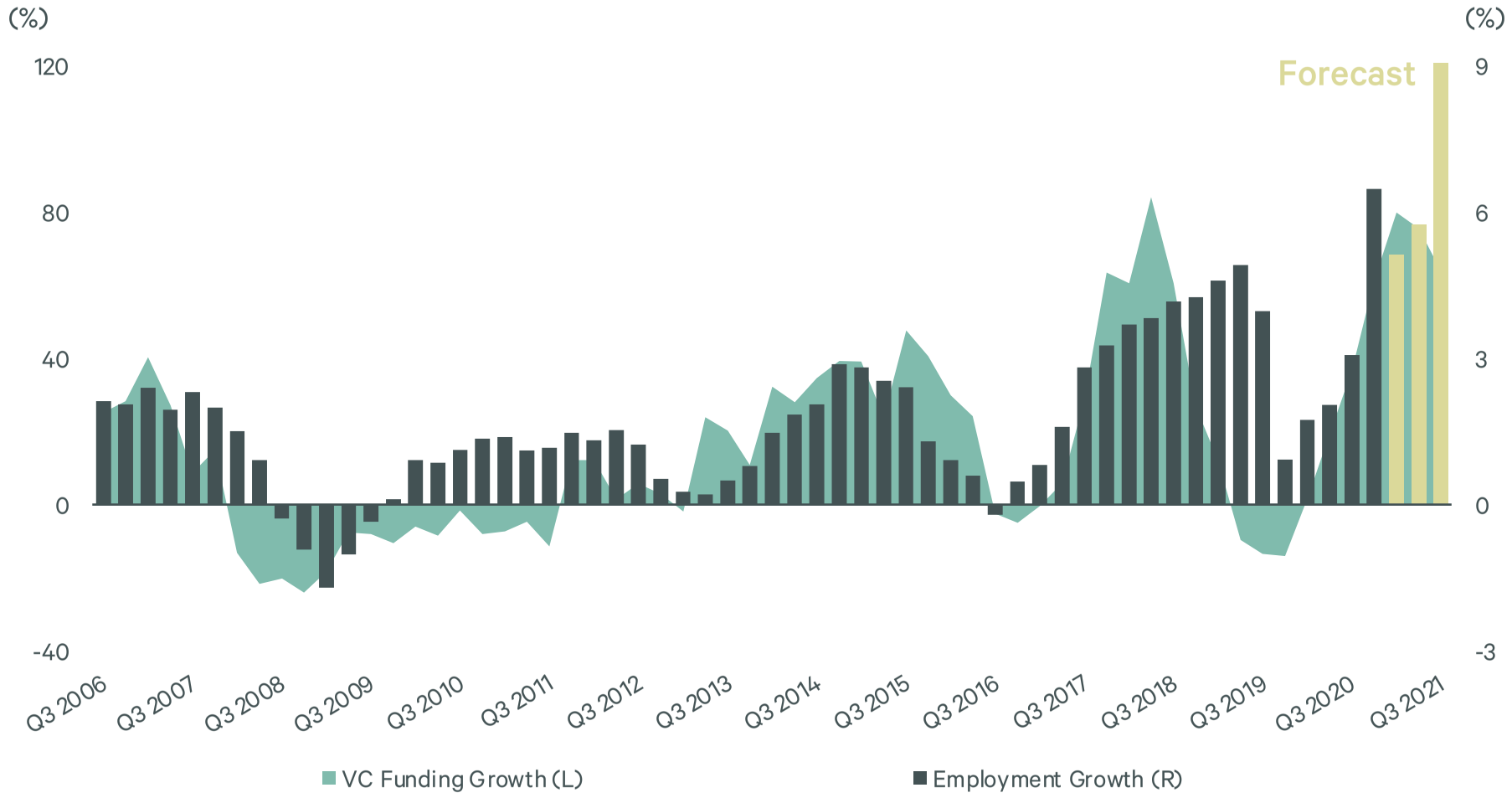
Source: Real Capital Analytics, CBRE Research, Q4 2021.

What's next?

5

More jobs and demand for space appear on the way

U.S. Life Sciences Employment and Venture Capital Funding Growth



Source: CBRE Research, CB Insights, US BLS, Q4 2021. Employment growth lagged by 3 quarters.

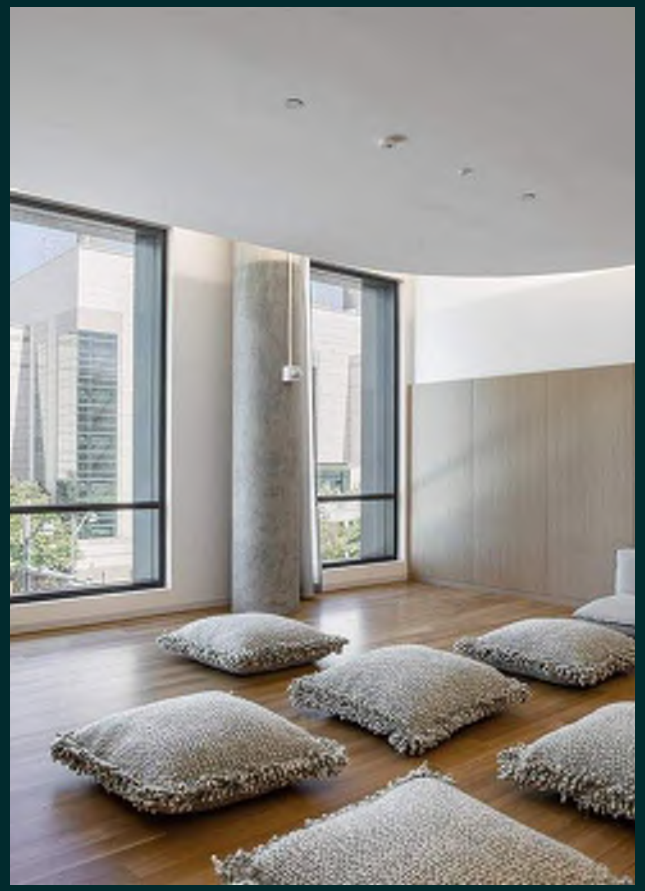
Life sciences real estate is transforming

Labs are becoming more efficiently utilized with less “wet” lab space

And a greater emphasis on collaboration and idea generation is emerging

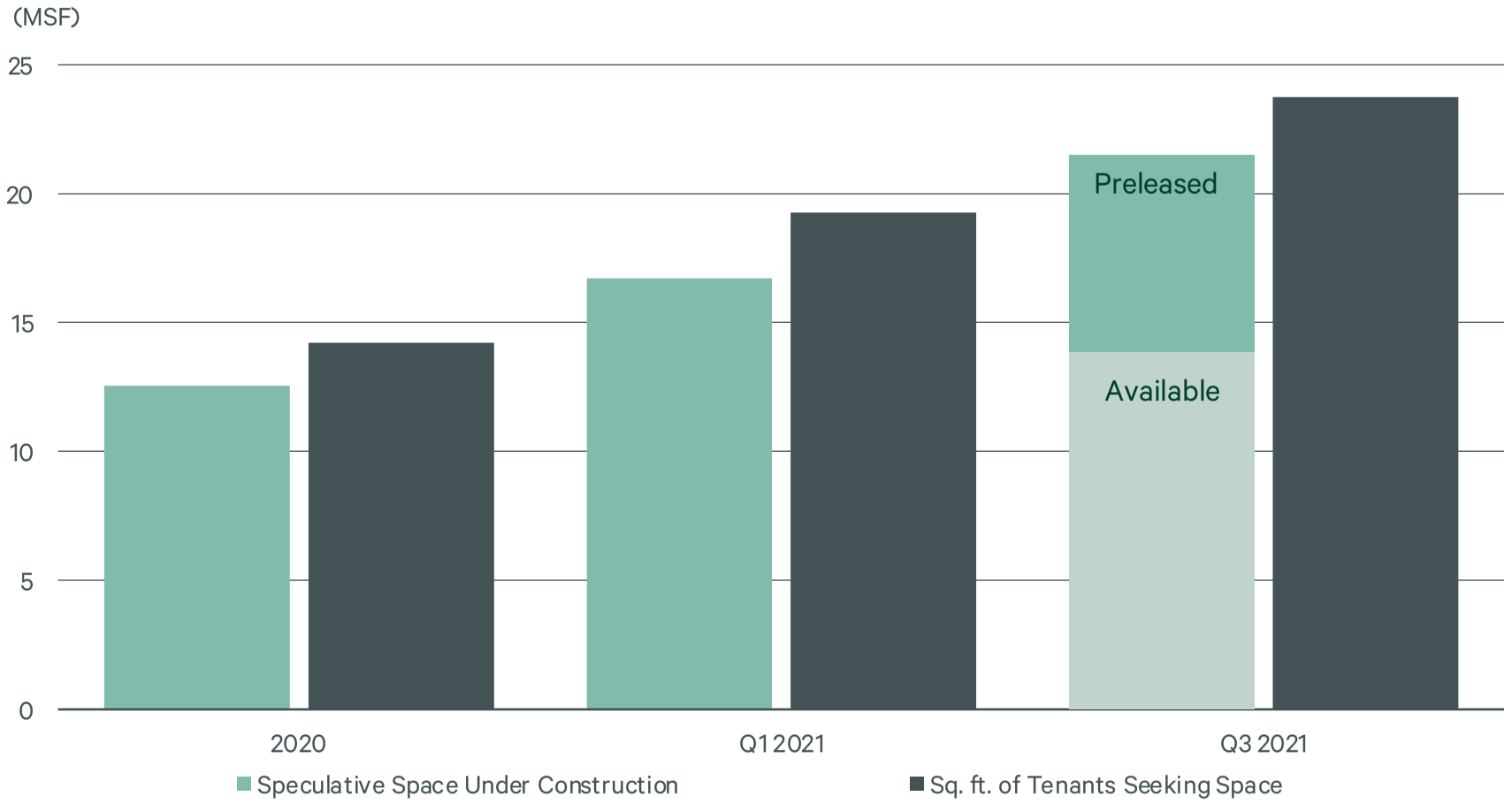
As a new generation of lab buildings with more amenities emerges

1800 Owens
San Francisco



Demand continues to outpace supply of lab space

Supply & Demand of U.S. Lab Space



Source: CBRE Research, Q4 2021.

Chicago

Market Trends

- New Class A lab/office inventory has proven a welcome addition to the Chicago life sciences industry. Demand continues to climb steadily in notable life sciences campuses such as Fulton Labs, where tenants include Talis Biomedical and Vanqua Bio.
- The maturing market has been bolstered by VC/private wealth infusions into early and growth-stage biotech, fueling continued activity in Chicago's core strengths of integrated AI, cell and gene therapy, structural biology and biochemistry.
- The market is increasingly focused on capital and infrastructure as savvy venture capital firms like Portal Innovations fund early-stage incubator models in Chicago's talent-rich Fulton Market District.
- Coastal and international-based biotech are bringing R&D operations to downtown Chicago. The steady suburban life science stalwarts are also establishing a presence in the CBD.
- Chicago's world-class university talent and research engines are venturing into lab development, with projects slated at University of Chicago, Northwestern and the University of Illinois.

Future Supply

The Chicago market has 864,500 sq. ft. currently under construction, all of which is expected to deliver by the end of 2024. Two of the three properties under construction are speculative, while the other is build-to-suit.

Top Lease Transactions

Date	Tenant	Size (SF)	Submarket	Use
Q3 – 2021	Hazel Technologies	57,826	City	Lab/R&D
Q3 – 2021	Vanqua Bio	22,385	City	Lab/R&D
Q3 – 2021	Cour Pharmaceuticals	14,512	Suburbs	Lab/R&D
Q3 – 2021	Charles River Labs	9,216	Suburbs	Lab/R&D
Q3 – 2021	Stoicheia	8,900	Suburbs	Lab/R&D

Inventory Lab/R&D

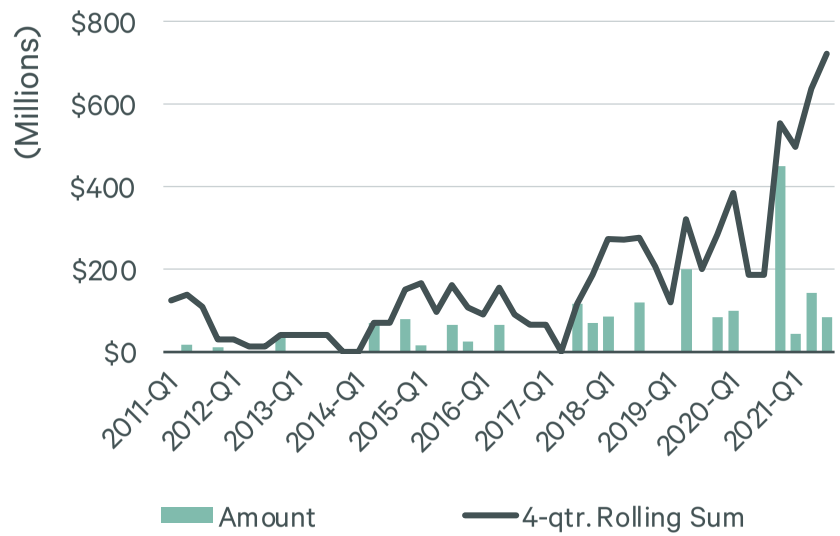
	Inventory (SF)	Avg. Asking Rents (NNN)	Vacancy Rate
Suburbs	988,426	$37.00	8.1%
City	569,938	$55.25	39.8%
Metro (Total)	**1,558,364**	**$46.29**	**19.7%**

Demand

	Q3 – 2021	6-mo Change (%)
# of TIMs	22	--%
Sq. ft. of Demand	350,000	-41.4%

Class A Asking Rents (NNN)	$60.00

VC Funding – Driver of Demand



Source: CB Insights

Q3 2021 market indicators

Market	Inventory (SF)	Vacancy	Asking Rents (NNN)	# of Tenants Seeking Space	Total Demand (SF)	6-month change in demand	Under Construction (SF of Lab/R&D)
Boston-Cambridge	42,128,275	1.1%	$94.62	134	6,000,000	26.3%	10,190,095
Chicago	1,558,364	19.7%	$46.29	22	350,000	-41.4%	864,454
Denver-Boulder	3,351,742	1.8%	$45.00–$50.00	17	1,480,000	-5.0%	635,000
Los Angeles	7,767,117	5.3%	$51.00	11	446,000	7.0%	143,000
New Jersey	20,400,000	9.1%	$26.00–$28.00	17	1,300,000	8.3%	222,500
New York City	1,904,960	1.1%	$89.82	49	1,568,000	39.4%	1,946,514
Philadelphia	9,579,835	13.9%	$40.00	61	2,018,000	37.7%	1,365,371
Raleigh-Durham	9,773,684	17.4%	$29.11	16	897,000	6.9%	1,177,163
San Diego	17,681,649	2.2%	$67.08	45	3,750,000	33.9%	2,404,000
San Francisco Bay Area	32,679,933	2.6%	$75.48	70	2,959,599	1.5%	3,036,657
Seattle	8,947,724	7.1%	$32.16	20	1,190,000	138.0%	1,100,000
Washington, D.C. – Baltimore	11,952,556	1.9%	$38.74	31	1,800,000	63.6%	714,000
Overall Total	**167,725,839**	**4.9%**	**--**	**513**	**23,758,599**	**19.7%**	**23,798,754**

TOD Parking Study
Life Science Building

Evanston, Illinois

Prepared For:

Trammell Crow Company

KLOA

Kenig, Lindgren, O'Hara, Aboona, Inc.

February 17, 2022

1. Introduction

This report summarizes the results of a parking study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed Transit Oriented Development (TOD) to be located at 1740 Orrington Avenue in Evanston, Illinois. The site, which is currently occupied by a vacant Burger King building and a residential building, is located in the southwest quadrant of the intersection of Orrington Avenue with Clark Street. The site will be redeveloped with a 10-story, that will be approximately 128,220 square feet in size with a 35-space on-site parking garage and 40 bicycle parking spaces. In addition, 100 parking spaces will be leased at the Church Street parking garage located at 525 Church Street, resulting in a total parking supply of 135 spaces or a parking ratio of 1.05 spaces per 1,000 square feet. Given the proximity of the proposed office development to the Chicago Transit Authority (CTA) Davis Purple Line station and the Metra Union Pacific/North Line (UP-N) Davis Street station, Pace bus routes, the City of Evanston city core, and residential and retail land uses, the site meets the characteristics of a TOD development. **Figure 1** shows an aerial view of the site.

The purpose of this TOD parking study is to (1) inventory the existing transportation conditions within the vicinity of the site, (2) determine the characteristics of the TOD, and (3) evaluate the parking needs of the TOD.

Aerial View of Site **Figure 1**

2. Existing Conditions

The following provides a summary of the alternative modes of transportation available in the area and the availability of parking in the area.

Site Location

The site is located in the southwest quadrant of the intersection of Orrington Avenue and Clark Street on the north side of the east-west alley that extends between Orrington Avenue and Sherman Avenue. This site is located in the core of Evanston's Central Business District, which generally consists of commercial, office, and multi-story residential developments. The site currently contains an existing a vacant Burger King restaurant building and a residential building.

Alternative Modes of Transportation

Accessibility to and from the Evanston central business district is enhanced by the alternative modes of transportation serving the area as summarized below. **Figure 2** shows a map of the public transportation serving the area.

Public Transportation. The area is served by several modes of public transportation including Metra commuter rail, CTA rapid transit service, and four bus lines.

The following summarizes the rail lines providing service to the area:

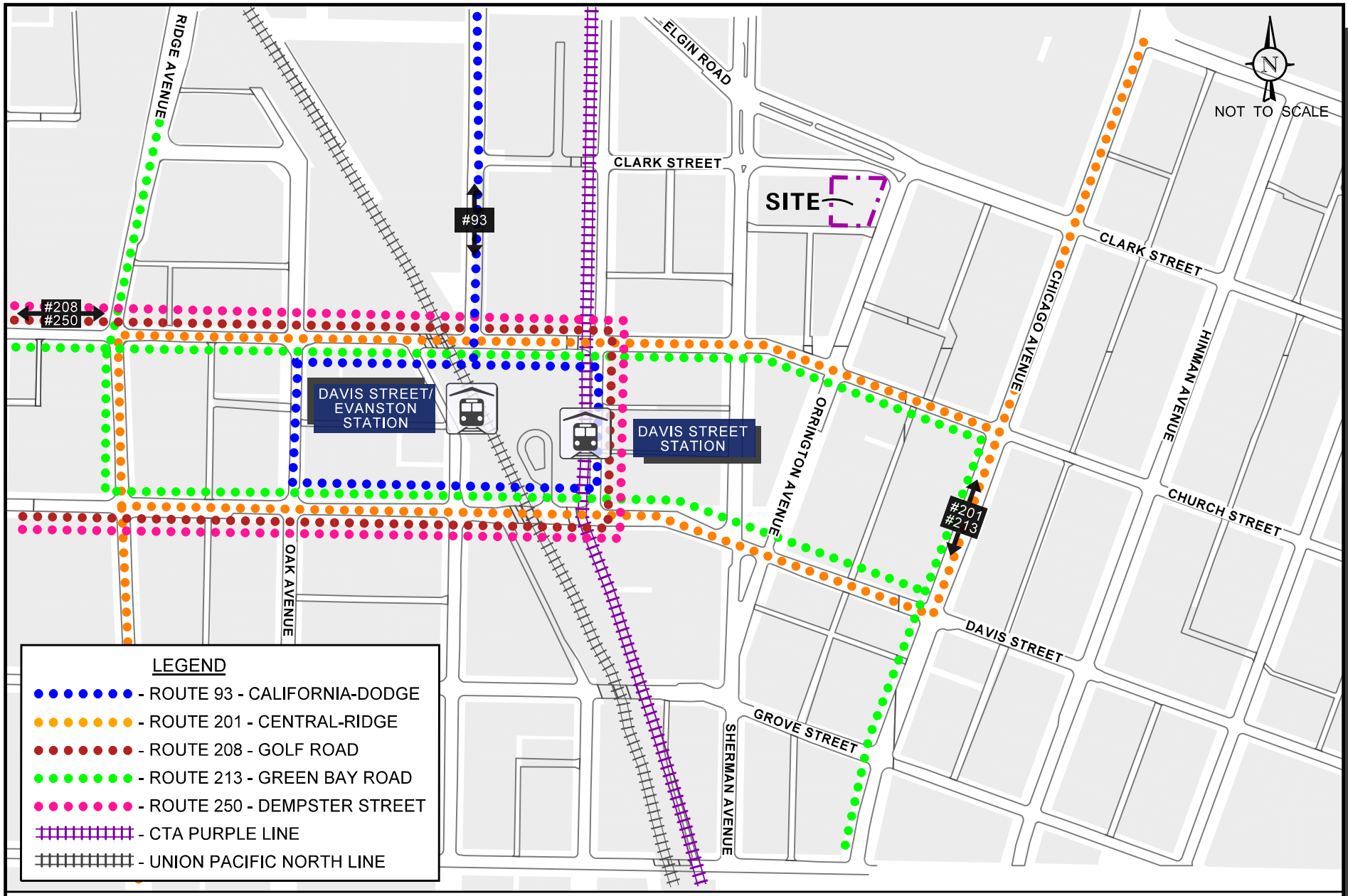
- The *Metra Union Pacific/North Line (UP-N)* has a local stop at Benson Avenue just north of Davis Street, which is located approximately two to three blocks west of Orrington Avenue. This line provides daily service between Ogilvie Transportation Center in Chicago and Kenosha, Wisconsin.

- The *CTA Purple Transit Line* has a local stop at Benson Avenue just north of Davis Street and is located two to three blocks west of Orrington Avenue. This line provides daily service between the Linden station in Wilmette and the Howard station on the border of Chicago and Evanston. In addition, weekday peak period express service is provided between the Howard station and the Chicago Loop.

The following bus routes serve the immediate area. Several other bus routes have stops that are within walking distance of the site.

- *Route 93 (California/Dodge)* generally runs along California Avenue and Dodge Avenue between the Davis CTA station and the Kimball CTA station. Service is provided on weekdays and Saturdays.

- *Route 201 (Central/Ridge)* generally runs along Central Avenue and Ridge Avenue between the Howard Street CTA station and Old Orchard Shopping Center. Service is provided on weekdays and Saturdays.



Life Science Building
Evanston, Illinois

Public Transportation

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 21-295

Figure: 2

- *Route 213 (Green Bay Road)* generally runs along Chicago Avenue and Green Bay Road between the Howard Street CTA station and downtown Highland Park. Service is provided on weekdays and Saturdays.

- *Route 208 (Golf Road)* which provides daily service between Evanston and Schaumburg. Service operates primarily via Golf Road between Davis Street CTA Purple Line/Metra Station and the Pace Northwest Transportation Center. Service on Sundays has a shorter span of service.

- *Route 250 (Dempster Street)* Provides daily service from downtown Evanston to the Des Plaines Metra station via Dempster and then south to the O'Hare Multi-Modal Facility (MMF). Communities served include communities Evanston, Skokie, Morton Grove, Niles, Park Ridge, Des Plaines and Rosemont, Service along this line includes the Davis Street CTA Station (Purple Line), the Skokie Swift CTA Station (Yellow Line), Notre Dame and Main East High Schools, and Lutheran General Hospital.

Non-Motorized Transportation Systems. All of the roadways within the immediate area have sidewalks on both sides of the roadway. Crosswalks are generally provided on all approaches of the signalized intersections. Pedestrian signals are also provided at all signalized intersections within the study area. Furthermore, multiple Divvy bike-sharing stations are located within the area with the two closest located at Benson Avenue and Church and at Chicago Avenue and Sheridan Road.

According to the City of Evanston's Area Bike Map, Elgin Road, Clark Street, Church Street, Chicago Avenue, and Hinman Avenue are designated bike routes. In addition, Chicago Avenue and Church Street provide a barrier-protected bike lanes within the vicinity of the site.

Car-Sharing Transportation Availability. Multiple car-sharing vehicles are located within walking distance of the site.

Area Parking

The parking in the area is summarized below.

On-Street Parking. Metered parking spaces are generally provided on Orrington Avenue, Clark Street (west of Orrington Avenue), Sherman Avenue, and Church Street.

Public Parking Facilities. The immediate area contains a number of public parking facilities owned and operated by the City of Evanston, including the following:

- The *525 Church Street Self Park* is located at the northeast corner of the intersection of Church Street with Chicago Avenue, approximately 1,000 feet southeast of the site. This parking structure has approximately 600 parking spaces providing daily and monthly parking.

- The *Sherman Plaza Self Park* is located in the northeast corner of the intersection of Davis Street and Benson Avenue, approximately 1,500 feet south of the site. This parking structure has approximately 1,583 parking spaces providing daily and monthly parking.

- The *1800 Maple Self Park* is located on the west side of Maple Avenue just north of Church Street, approximately 1,500 feet west of the site. This parking structure has approximately 1,400 parking spaces providing daily and monthly parking.

In addition to these public parking facilities, there are also two other parking facilities within close proximity to the site. These are:

- The *Orrington Garage* is located at 1603 Orrington Avenue immediately south of the site. The underground parking facility has approximately 290 parking spaces and provides hourly rates.

- The *500 Davis Street Garage* is located in the southwest quadrant of the intersection of Davis Street with Hinman Avenue, approximately 0.8 miles southeast of the site. The parking structure has 250 parking spaces and provides hourly rates.

3. TOD Parking Demand

The following provides a description of the proposed TOD and information regarding parking demand anticipated to be generated by the proposed TOD based on national data and studies.

Proposed Site and TOD Plan

The site, as previously indicated, is located at 1740 Orrington Avenue. As proposed, the site will be redeveloped with a 10-story, approximately 128,220 square-foot Life Science building. As proposed, the site will provide a 35-space parking garage with access off the east-west alley that runs along the site's south property line between Orrington Avenue and Sherman Avenue. Given the proximity of the proposed development to the Chicago Transit Authority (CTA) Davis Purple Line station and to the Metra Union Pacific/North Line (UP-N) Davis Street station, multiple Pace bus routes, the City of Evanston city core, and residential and retail land uses, the proposed development meets the characteristics of a TOD development.

Characteristics of a TOD Development

Most TOD developments are defined as compact pedestrian-friendly, high-density developments near transit stations. The main goals of a TOD are to improve transit accessibility, increase transit ridership and reduce the dependence on the automobile. By contrast these main goals enhance the livability of an area, broaden the housing choices and reduces the parking requirements and demand. More often than not, cities rely on established parking codes to calculate parking requirements. This in turn can lead to overparking areas and failing to strike a balance between the adequate parking supply for a TOD development.

Parking Demand Evaluation

In order to determine the appropriate number of parking spaces for the proposed development, KLOA, Inc. researched various studies conducted in Chicago as well as throughout the United States to find a common characteristic in the parking demand of office TOD developments. Below is a summary of some of these studies:

2010 Work Trip Flows (RTAMS, 2010)

Based on a study conducted in 2010 by the Regional Transportation Asset Management System (RTAMS) of work trip flows from the six county northeastern Illinois region to Evanston Township, approximately 57 percent of the workers destined to Evanston Township drive alone with the remaining 43 percent utilizing other means of transportation. Employees who take public transportation from surrounding communities such as Morton Grove, Niles and Des Plaines to City of Evanston city core utilize Pace buses to commute, with average travel times ranging between 30 and 60 minutes. While this shows a significant reduction in the automobile utilization, the results are skewed given that it encompasses all of Evanston Township, which includes numerous areas with little to no immediate public transportation available.

For comparison purposes, KLOA, Inc. also looked at the characteristics of the City of Chicago divided by neighborhood and the percentage of workers utilizing their personal vehicle to get to work. Based on this, **Table 1** shows a breakdown of the mode share by area.

Table 1
2010 WORK TRIP FLOWS (ORIGIN – SIX COUNTY NORTHEASTERN ILLINOIS REGION)

Work Location	Mode Share				
	Drive Alone	Carpool	Bus	Rail	Other
The Loop	22%	6%	16%	50%	6%
River North	40%	7%	13%	31%	9%
North Michigan/Streeterville	37%	8%	21%	25%	9%
South Loop	41%	8%	17%	28%	6%
West Loop	34%	7%	13%	40%	6%

Based on the above, approximately 78 percent of the employees destined to the Chicago Loop either use public transportation or carpool to get to work while the remaining 22 percent drive alone. By contrast, approximately 60 percent of the employees destined to the surrounding neighborhoods use either public transportation or carpool with the remaining 40 percent driving alone. The West Loop, which extends from the Chicago River west to Ashland Avenue and from Grand Avenue south to Van Buren Street, experiences a modal split of 66 percent either utilizing public transportation or carpooling to get to work with the remaining 34 percent driving alone. It should be noted that based on information provided by City of Evanston staff, the average trip time for public transit is 57 minutes in Chicago, when reviewing the CTA trains, Metra trains, and CTA and Pace buses, which is consistent with the travel time to Evanston's city core indicated earlier. The above data clearly indicates that the availability of public transportation near workplaces coupled with the high density of the area, the numerous local dining and retail amenities, and the mix of land uses reduce the dependence on the automobile and in turn reduce the need for a large number of parking spaces for each individual land use. By applying this correlation between the Loop and the surrounding neighborhoods from the RTAMS survey results, the percentage of workers that would drive to downtown Evanston is reduced to 35 percent.

Getting the Parking Right for Transit-Oriented Development (Center for Transportation Research, University of Texas at Austin)

Based on a study prepared by the University of Texas with a grant from the U.S. Department of Transportation which looked at various communities throughout the United States, it was found that the best practices for TOD parking include:

1. Reductions: Parking requirements can typically be reduced around 20 and up to 50 percent in areas with good transit. Deregulate parking to allow developers to assess parking demand, provide market-priced parking to meet average demand, and use shared parking to accommodate peaks.

2. Management: Cities need to create/utilize parking databases to understand supply and demand and to develop programs that allow the City to track the impacts of adjustments.

3. Pricing: Pricing can be used to improve monitoring, increase enforcement, reduce spillover, and make improvements in parking districts.

The study acknowledges that while it is neither feasible nor reasonable to eliminate all parking in a TOD district, applying the conventional parking ratios to TOD projects would undermine the expected community benefits of TODs and could even cause the TOD initiative to fail. This is because the conventional parking standards are very suburban biased and are based largely on low-density single land-uses. The study further states that "Successful integration of parking is vital for capturing the benefits of TODs and achieving all of its goals. Applying suitable parking standards in TODs can improve the overall performance of the TOD and shape travel behavior, community design, and development economics". Based on a publication titled *Developing TOD Parking Strategies, APA Transportation Planning, Volume XXX, Number 1* "Mainstream data suggest that developers often rely on established parking codes to calculate parking requirements for TODs, which can lead to parking and traffic problems, obstruct land development, and reduce the impact in transit use".

Current TOD (Office Development) Trends

It should be noted that while most of the data and guidelines available for TOD developments is for residential uses which supports a significant reduction in parking demand, it is worth noting that the same parking trends will most likely be observed and experienced in an office development within a dense urban area and within close proximity to transit such as 1740 Orrington Avenue. One development in the area that embraces this trend and characteristics is the 909 Davis Street building which is 207,743 square feet in size and provides 57 parking stalls on-site for a parking ratio of 0.29 stalls per 1,000 square feet. Together with this trend is the fact that a study prepared by the City of Evanston in 2017 showed the occupancy counts at the 1800 Maple Street, Church Street, and Sherman Plaza self-park garages at less than 60 percent occupancy at peak times on weekdays and less than 45 percent occupancy on weekends.

For comparison purposes, a review of the City of Evanston TOD parking requirements for residential buildings indicates that it resulted in a reduction of 56 percent in the number of parking spaces required for a studio/one-bedroom unit in a TOD zone as compared to a non-TOD location. By applying the same standards to an office development within close proximity to transit, the parking requirement could be reduced from 2.0 spaces per 1,000 square feet to 0.88 spaces per 1,000 square feet. This is more in line with the parking ratios discussed previously.

Given the relatively new efforts by many communities to reduce the reliance and dependence on the automobile by increasing the density and types of land uses within close proximity to a transit station and the ability of residents, visitors, and employees to walk, bike, or take transit to work, new trends with regards to parking have emerged. Below is a summary of those trends.

- Reducing and/or eliminating the minimum parking requirements and instead establishing parking maximums.
- Develop around or near transit within a rich mix of land uses.

- Share parking whenever possible.
- Encourage developments to provide ample bicycle parking stalls to increase bicycle ridership.
- Provide vehicle trip reduction programs such as telecommuting and/or flexible work schedules.
- Allow the private sector to make the decision as to how many parking spaces are required for the TOD.
- Allow employees of tenants to seek monthly parking in adjacent or nearby parking lots/structures.

As stated in the UCLA publication titled *The High Cost of Free Parking (2011),* "Commuters will drive to work only if they can park free at work; if they have to pay to park, they will ride public transit, walk, or bike to work. Employer-parking draws commuters into cars and away from transit". Ultimately, free parking is distorting transportation prices in favor of driving alone which increases congestion, parking demand, fuel consumption, accidents, and air pollution. Based on a model of commuter travel in Los Angeles, if commuters can park free at work, 70 percent of them would drive alone, while 15 percent would ride public transit and 15 percent would carpool. By comparison if commuters must pay for parking, only 45 percent of them would drive alone, while 34 percent would ride public transit and 21 percent would carpool. All of this points out to the fact that tenants in a setting such as downtown Evanston want to be located in an urban setting instead of a suburban one. It becomes a lifestyle choice that self-imposes a parking reduction from the employee and the employer's perspective.

Furthermore, many recently constructed office and life science buildings in Chicago near transit hubs have provided below 0.50 spaces per 1000 SF without issue, despite providing below the historically typical number of parking spaces required in a suburban setting. These buildings are very recent, clear examples of private markets dictating the amount of parking required for a Class A office tower. Below is a sample of these office buildings.

- 1375 W. Fulton (110 spaces, 0.37 spaces per 1000 SF)
- 400 N. Aberdeen (175 spaces, 0.41 spaces per 1000 SF)
- 800 W. Fulton (37 spaces, 0.08 spaces per 1000 SF)
- 167 N. Green (135 spaces, 0.21 spaces per 1000 SF)

As can be seen parking provided at these buildings is at least 50 percent less than the proposed supply at the proposed development.

4. Evaluation and Recommendations

The following discusses the conclusions regarding the proposed development and any recommendations to reduce the TOD's impact on area streets and parking.

Overall Evaluation

As seen from the previous discussion, the availability of alternative modes of transportation will adequately serve future employees of the proposed office development. This site is located within walking distance of the CTA Davis Purple Line station (approximately 0.3 miles) and the Metra Union Pacific/North Line (UP-N) Davis Street station (approximately 0.3 miles), the City of Evanston city core, Northwestern University campus and residential and retail land uses. Based on a review of ridership statistics provided by RTAMS, the Davis Street station has experienced a seven to eight percent increase in ridership over the past 10 years even though the employment and population within half a mile to one mile of the transit center have remained mostly unchanged. This is attributed to the fact that downtown Evanston is heavily served by public transportation, with Evanston stations being some of the highest ridership stations outside the City of Chicago. Additionally, research indicates that commuters are willing to travel longer distances by public transit than by car, as work may be completed en route to the office. Therefore, this confirms that public transportation continues to be an attractive and convenient alternative to the office, retail and residential uses within the City of Evanston city core.

Furthermore, given that bicycle facilities and bicycle routes are provided in the area, which allow for access to other major bike routes, the proposed office building plans to provide a new Divvy bike-sharing station as well as indoor bicycle parking on site to encourage bicycle ridership. Lastly, sidewalks and traffic signals with pedestrian countdown timers are provided in the area and crosswalks striped with high-visibility continental striping are generally provided near the site. Therefore, biking and walking to/from the proposed office building will be very attractive and convenient.

Parking

The proposed development qualifies as a TOD. As such, the development is proposing a reduced parking ratio of 0.9 spaces per 1,000 square feet, At 0.90/1000, which is almost double the supply at other similar buildings in various parts of the city with similar TOD attributes, to conform with the trend of lower parking supply for TODs. As indicated earlier, these developments have experienced a significant reduction in parking demand given their location in an urban environment such as downtown Evanston, which is in close proximity to public transit, other alternative modes of transportation, and a mix of uses that collectively minimize the reliance on the automobile as a primary mode of transportation. The development is also following the trend of the low amount of parking provided in other recently-constructed Class A Office and Life Science office buildings, which reflects that the private market has clearly determined that Class A office tenants no longer consider surplus parking an important amenity.

Transportation Sustainability Conclusions and Recommendations

The following summarizes transportation sustainability conclusions and measures that could be implemented by the proposed TOD to further foster alternative modes of transportation other than the automobile, and to enhance pedestrian/bicycle safety:

- Employees will benefit from sidewalks, crosswalks, and pedestrian signals which are generally provided throughout downtown Evanston.

- The provision of a new Divvy bike-sharing station by the proposed development as well as proximity of the site to nearby Divvy stations and car-share facilities will provide employees and visitors with additional alternative modes of transportation.

- Consideration should be given to providing a real-time transit monitor within the lobby in order to further encourage public transit use.

- Implementation of one or more of the following Travel Demand Measures (TDM):

    - Carpool matching services
    - Preferred carpool parking
    - Telecommuting
    - Bike storage and changing facilities

4. Conclusion

This report summarizes the results and findings of a TOD parking study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed TOD to be located at 1740 Orrington Avenue in Evanston, Illinois. As proposed, the site will be redeveloped with a 10-story, approximately 128,220 square-foot Life Science building. The site will provide a 35-space parking garage with access off the east-west alley that runs along the site's south property line between Orrington Avenue and Sherman Avenue. In addition, 100 spaces will be leased at the Church Street parking garage located at 525 Church Street for a total parking supply of 135 spaces at a ratio of 1.05 spaces per square feet.

Based on the preceding analysis and recommendations and given the proximity of the proposed office development to the Chicago Transit Authority (CTA) Davis Purple Line station (approximately 0.3 miles) and to the Metra Union Pacific/North Line (UP-N) Davis Street station (approximately 0.3 miles), multiple Pace bus routes, the City of Evanston city core, and residential and retail uses, the development meets the characteristics of a TOD development. The reduction in off-street parking will not be detrimental to the future employees and the area based on the following:

- The proposed development meets the characteristics of a TOD development.
- Accessibility to and from the Evanston central business district is enhanced by the numerous alternative modes of transportation serving the area.
- The nature of the Evanston downtown area with excellent transit service, bicycle and pedestrian facilities (including the proposed Divvy bike-sharing station adjacent to the site), high density, and broad mix of land uses lends itself to a much lower parking requirement than what the City of Evanston code requires.
- The immediate area contains a number of public parking facilities owned and operated by the City of Evanston as well as various private parking structures/lots that provide ample off-street parking
- Based on review of numerous studies of TOD developments, it is imperative to strike a balance between the parking supply and the development. If typical parking ratios are applied it can lead to overparking areas, discouraging development and failing to create a true TOD development.
- Work Trip Flow Data collected by RTAMS clearly indicates that office developments within close proximity to transit reduces the auto dependency and thus the parking demand.

Traffic Impact Study
Life Science Building

Evanston, Illinois

Prepared for:

Trammell Crow Company

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

January 20, 2022

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Executive Summary

This report summarizes the results of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed life science building to be located at 1740 Orrington Avenue in Evanston, Illinois. The site, which was previously occupied by Burger King restaurant, is located in the southwest corner of the intersection of Orrington Avenue with Clark Street. As proposed, the development will be an approximate 150,000 square-foot life science building with a 35-space on-site parking garage and 40 bicycle parking spaces. Access to the garage and loading will be provided off the public alley that borders the site on the south. In addition, approximately 100 parking spaces will be leased at the Church Street parking garage located at 525 Church Street to accommodate overflow parking.

The objective of the traffic study was as follows:

- Determine the existing vehicular, pedestrian, bicycle, and public transportation conditions in the study area to establish a base condition.

- Assess the impact that the proposed development will have on transportation conditions in the area.

- Determine any roadway, access, bicycle, and pedestrian modifications and/or improvements that will be necessary to effectively accommodate and mitigate future conditions.

Accessibility to and from the area is enhanced by public transportation and various alternative modes of transportation. The Metra Union Pacific North Line (UP-N) and Chicago Transit Authority (CTA) Rapid Transit Purple Line have stations within a half-mile of the site and several CTA bus routes have stops in the area. In addition, pedestrian facilities including sidewalks and crosswalks are generally provided on all roadways within the area. Barrier-protected bike lanes are provided on Church Street and Chicago Avenue. Car-sharing vehicles are also located within the area.

Vehicle, pedestrian, and bicycle counts were conducted during the weekday morning and evening peak periods in order to determine the general transportation conditions during these time periods. The following intersections were analyzed as part of this study:

- Orrington Avenue with Clark Street
- Orrington Avenue with public alley
- Clark Street with Orrington Avenue
- Clark Street with Sherman Avenue
- Church Street with Orrington Avenue
- Church Street with Chicago Avenue
- Church Street with Hinman Avenue
- Church Street with 525 Church Street parking garage access drive

Based on the preceding analyses and recommendations, the following conclusions were made:

- The existing roadway system has sufficient reserve capacity to accommodate the traffic to be generated by the proposed development. All of the intersections within the study area are projected to continue to operate at a good level of service assuming the additional traffic to be generated by the proposed development and the other area growth. Overall, the proposed development will have a limited impact on the operation of the roadway system As such, no roadway improvements and/or traffic control modifications are required.

- Given the location of the site within the central business district and its proximity to alternative modes of transportation, the number of vehicle trips generated by the development will be reduced.

- Access to the on-site parking garage and the loading dock will be via the east-west public alley that extends along the south side of the site between Orrington Avenue and Sherman Avenue. The access drive will provide one inbound lane and one outbound lane.

- Approximately 100 parking spaces will be leased at the Church Street parking garage located at 525 Church Street to accommodate overflow parking.

1. Introduction

This report summarizes the results of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for a proposed life-science building to be located at 1740 Orrington Avenue in Evanston, Illinois. The site, which was previously occupied by Burger King restaurant, is located in the southwest corner of the intersection of Orrington Avenue with Clark Street. As proposed, the development will be an approximate 150,000 square-foot life science building with a 35-space on-site parking garage and 40 bicycle parking spaces. Access to the garage and loading will be provided off the public alley that borders the site on the south. In addition, approximately 100 parking spaces will be leased at the Church Street parking garage located at 525 Church Street to accommodate overflow parking.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed development will have on traffic conditions in the area, and determine if any roadway or access improvements are necessary to accommodate traffic generated by the proposed development. **Figure 1** shows the location of the site in relation to the area roadway system. **Figure 2** shows an aerial view of the site.

The sections of this report present the following:

- Existing roadway conditions
- A description of the proposed development
- Directional distribution of the development traffic
- Vehicle trip generation for the development
- Future traffic conditions including access to the development
- Traffic analyses for the weekday morning and evening peak hours
- Recommendations with respect to adequacy of the site access and adjacent roadway system

Traffic capacity analyses were conducted for the weekday morning and evening peak hours for the following conditions:

1. Base Conditions - Analyzes the capacity of the existing roadway system using existing peak hour traffic volumes in the surrounding area adjusted to reflect normal conditions.

2. No-Build Conditions – Analyzes the capacity of the existing roadway system using the base traffic volumes increased by a regional growth factor and including the traffic to be generated by other proposed and/or approved area developments.

3. Future Conditions – Analyzes the capacity of the projected roadway system assuming projected traffic volumes which include the base traffic volumes, ambient area growth not attributable to any particular development, the traffic to be generated by other proposed/approved area developments, and the traffic estimated to be generated by the proposed subject development.

Site Location **Figure 1**

Aerial View of Site **Figure 2**

2. Existing Conditions

Existing transportation conditions in the vicinity of the site were documented based on a field visit conducted by KLOA, Inc. in order to obtain a database for projecting future conditions. The following provides a description of the geographical location of the site, physical characteristics of the area roadway system including lane usage and traffic control devices, and existing peak hour traffic volumes.

Site Location

The site is bounded by Orrington Avenue on the east, Clark Avenue on the north, and an east-west public alley on the south. Located within Evanston's central business district, the land uses surrounding the site generally consist of commercial, office, and multi-story residential developments. The site was previously occupied by Burger King restaurant.

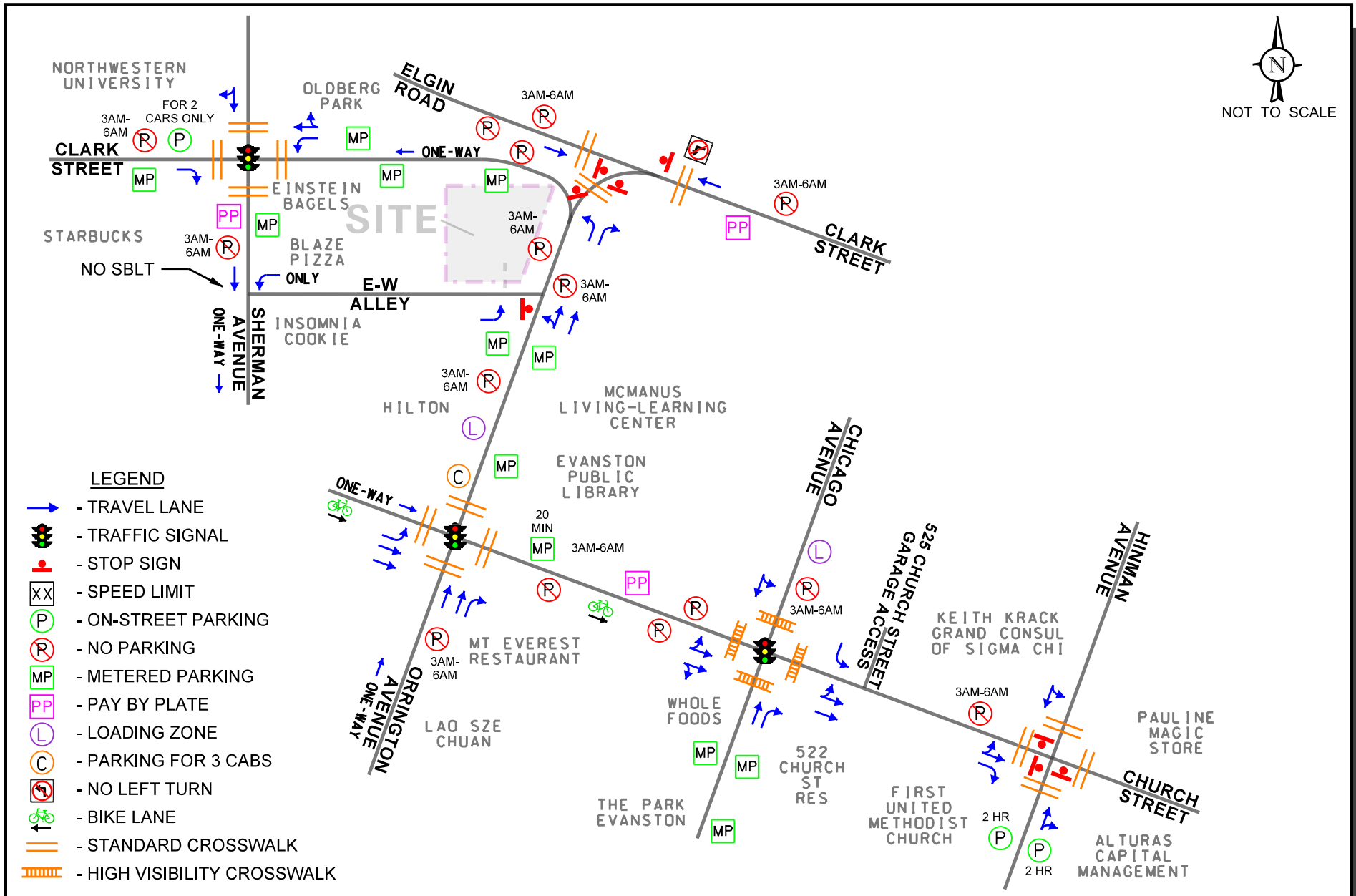
Existing Roadway System Characteristics

The characteristics of the existing roadways within the study area are illustrated in **Figure 3** and described below. All roadways are under the jurisdiction of the City of Evanston.

Orrington Avenue is generally a north-south, one-way roadway that provides two lanes in the northbound direction. At its signalized intersection with Church Street, Orrington Avenue provides two through lanes and an exclusive right-turn lane on the northbound approach. Both the north and south legs of this intersection provide standard style crosswalks. At its all-way stop sign controlled intersection with Elgin Road and Clark Street, Orrington Avenue provides an exclusive left-turn lane (onto Clark Street) and an exclusive right-turn lane. Northbound left-turn movements from Orrington Avenue onto Elgin Road are not permitted. Parallel metered parking is generally permitted on both sides of the road between Church Street and Elgin Road.

Clark Street is an east-west, one-way roadway between Orrington Avenue and Sherman Avenue and becomes a two-way roadway west of Sherman Avenue. At its signalized intersection with Sherman Avenue, Clark Street provides an exclusive left-turn lane and a combined through/right-turn lane on the westbound approach. The eastbound approach provides an exclusive right-turn lane. Both the east and west legs of this intersection provide standard style crosswalks. Parallel metered parking is generally permitted on both sides of the road. At its all-way stop-sign controlled intersection with Elgin Road and Orrington Avenue, Clark Street provides a through lane on the westbound approach. Westbound left-turn movements from Clark Street onto Orrington Avenue are not permitted.

Elgin Road is an east-west, two-way roadway that becomes Clark Street east of Orrington Avenue. At its all-way stop-sign controlled intersection with Clark Street and Orrington Avenue, Elgin Road provides a through lane on the eastbound approach. All legs of this intersection provide standard style crosswalks.



Life-Science Building
Evanston, Illinois

Existing Roadway Characteristics

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Figure: 3

Chicago Avenue is generally a north-south, two-way roadway. In the vicinity of the site, Chicago Avenue provides a single lane in each direction with a two-way, protected bike lane located on the east side of the road north of Davis Street. Parallel metered parking is generally permitted on both sides of the road between Davis Street and Church Street. At its signalized intersection with Church Street, Chicago Avenue provides a through lane and an exclusive right-turn lane on the northbound approach and a shared left-turn/through lane on the southbound approach. Both approaches provide high-visibility, ladder style crosswalks. Chicago Avenue has a posted speed limit of 25 miles per hour. Chicago Avenue carries an Annual Average Daily Traffic (AADT) volume of approximately 7,200 vehicles north of Church Street and 11,600 vehicles south of Church Street (IDOT 2018).

Church Street is generally a one-way eastbound roadway that provides two eastbound lanes with metered parallel parking generally provided on the north side of the roadway. Church Street also provides a barrier-protected bike lane for eastbound travel west of Chicago Avenue. At its signalized intersection with Orrington Avenue, Church Street provides an exclusive left-turn lane and two through lanes on the eastbound approach. Both the east and west legs of the intersection provide standard-style crosswalks. At its signalized intersection with Chicago Avenue, Church Street provides a shared left-turn/through lane and a shared through/right-turn lane on the eastbound approach. Both the east and west legs of the intersection provide high-visibility, ladder style crosswalks. At its all-way stop sign controlled intersection with Hinman Avenue, the eastbound approach of Church Street provides a shared left-turn/through lane and a separate right-turn lane. Both the east and west legs of the intersection provide standard style crosswalks. Church Street carries an AADT volume of approximately 7,950 vehicles (IDOT 2018).

Hinman Avenue is generally a north-south, two-way roadway. In the vicinity of the site, Hinman Avenue provides a single lane in each direction with parallel parking generally permitted on both sides of the road. At its all-way stop sign controlled intersections with Davis Street and Church Street, Hinman Avenue provides a single lane approach on both legs. Both approaches at both intersections provide standard style crosswalks.

Sherman Avenue is a north-south, one-way roadway in the southbound direction south of Clark Street and becomes a two-way roadway north of Clark Street. At its signalized intersection with Clark Street, Sherman Avenue provides a combined through/right-turn on the southbound approach. Sherman Avenue carries an AADT volume of approximately 3,300 vehicles (IDOT 2018).

Alternative Modes of Transportation

Accessibility to and from the Evanston central business district is enhanced by the alternative modes of transportation serving the area as summarized below.

Public Transportation. The area is served by several modes of public transportation including Metra commuter rail, CTA rapid transit service, and four bus lines. The public transportation serving the area is summarized below and illustrated in **Figure 4.**

The following summarizes the rail lines providing service to the area:

- The *Metra Union Pacific/North Line (UP-N)* has a local stop at Benson Avenue just north of Davis Street, which is located approximately two to three blocks west of Orrington Avenue. This line provides daily service between Ogilvie Transportation Center in Chicago and Kenosha, Wisconsin.

- The *CTA Purple Transit Line* has a local stop at Benson Avenue just north of Davis Street and is located two to three blocks west of Orrington Avenue. This line provides daily service between the Linden station in Wilmette and the Howard station on the border of Chicago and Evanston. In addition, weekday peak period express service is provided between the Howard station and the Chicago Loop.

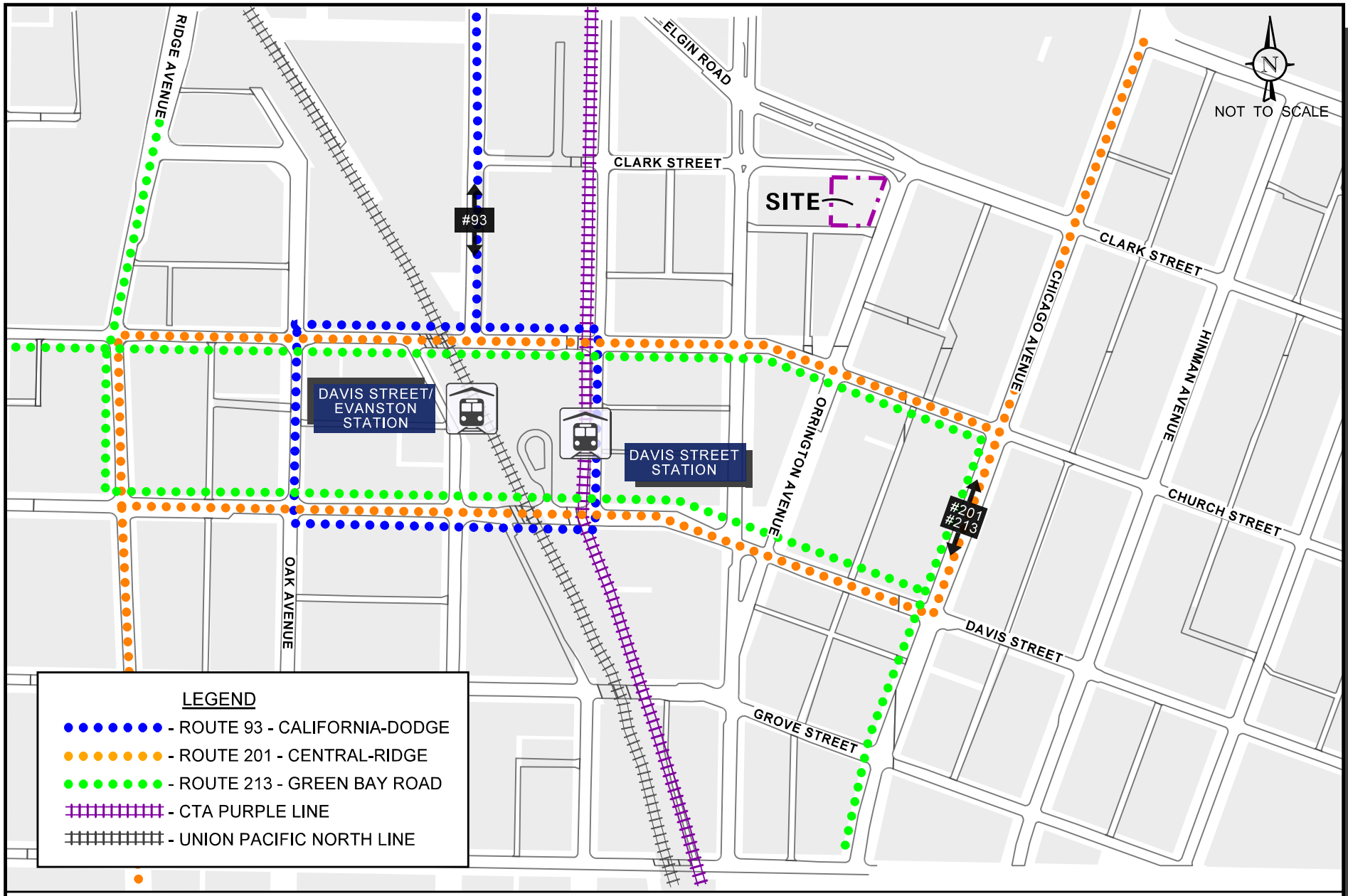
The following bus routes serve the immediate area. Several other bus routes have stops that are within walking distance of the site.

- *Route 93 (California/Dodge)* generally runs along California Avenue and Dodge Avenue between the Davis CTA station and the Kimball CTA station. Service is provided on weekdays and Saturdays.

- *Route 201 (Central/Ridge)* generally runs along Central Avenue and Ridge Avenue between the Howard Street CTA station and Old Orchard Shopping Center. Service is provided on weekdays and Saturdays.

- *Route 213 (Green Bay Road)* generally runs along Chicago Avenue and Green Bay Road between the Howard Street CTA station and downtown Highland Park. Service is provided on weekdays and Saturdays.

Non-Motorized Transportation Systems. All of the roadways within the immediate area have sidewalks on both sides of the roadway. Crosswalks are generally provided on all approaches of the signalized intersections. Pedestrian signals are also provided at all signalized intersections within the study area.



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Public Transportation

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Figure: 4

According to the City of Evanston's Area Bike Map, Elgin Road, Clark Street, Church Street, Chicago Avenue, and Hinman Avenue are designated bike routes. In addition, Chicago Avenue and Church Street provide barrier-protected bike lanes within the vicinity of the site.

Car-Sharing Transportation Availability. Multiple car-sharing vehicles are located within walking distance of the site.

Existing Traffic Volumes

In order to determine current vehicle, pedestrian, and bicycle conditions within the study area, KLOA, Inc. performed peak period transportation counts at the following intersections:

- Orrington Avenue with Clark Street
- Orrington Avenue with public alley
- Clark Street with Orrington Avenue
- Clark Street with Sherman Avenue
- Church Street with Orrington Avenue
- Church Street with Chicago Avenue
- Church Street with Hinman Avenue
- Church Street with 525 Church Street parking garage access drive

All of the traffic counts were conducted during the weekday morning (7:00 A.M. to 9:00 A.M.) and evening (4:00 P.M. to 6:00 P.M.) peak periods on Thursday, October 14, 2021. The results of the traffic counts showed that the weekday morning peak hour of traffic occurs from 8:00 A.M. to 9:00 A.M. and the weekday evening peak hour of traffic occurs from 4:45 P.M. to 5:45 P.M.

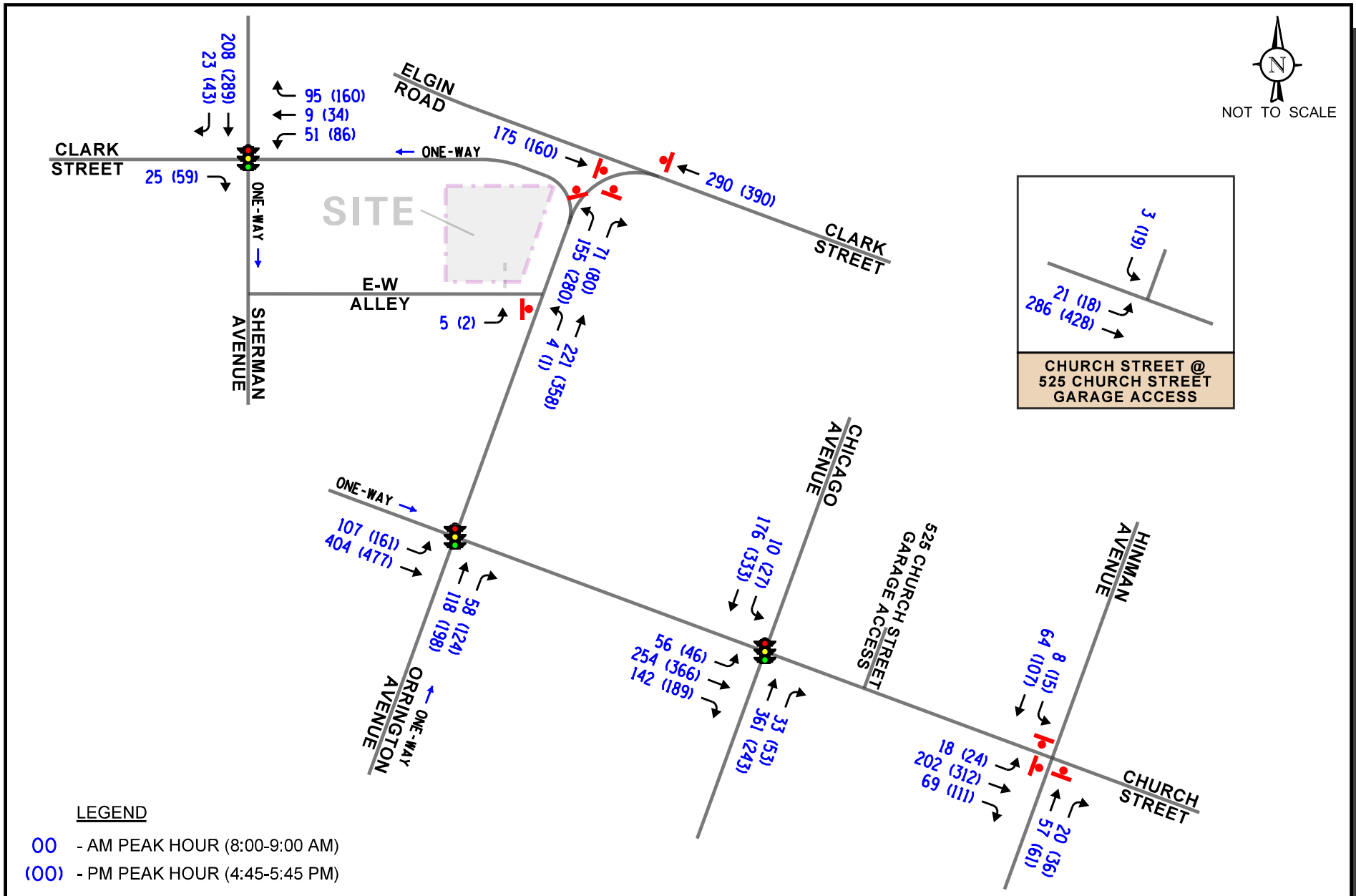
It should be noted that due to the COVID-19 pandemic, traffic volumes in the area may not reflect normal or typical conditions. As such, the 2021 traffic counts were compared to previous traffic counts conducted in the area by KLOA, Inc. in 2018. Based on the comparison of the traffic volumes, the 2021 traffic volumes were increased as follows:

- The Orrington Avenue northbound through volumes were increased by 60 percent during the morning peak hour and 50 percent during the evening peak hour.

- The Church Street eastbound through volumes were increased by 150 percent during the morning and evening peak hours.

- The Chicago Avenue southbound through volumes were increased by 10 percent during the morning peak hour and 25 percent during the evening peak hour and the northbound through volumes were increased by 30 percent during the morning peak hour and were not increased during the evening peak hour.

Figures 5 and **6** illustrate the Year 2021 existing vehicle, pedestrian, and bicycle peak hour volumes.



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Year 2021 Base Traffic Volumes

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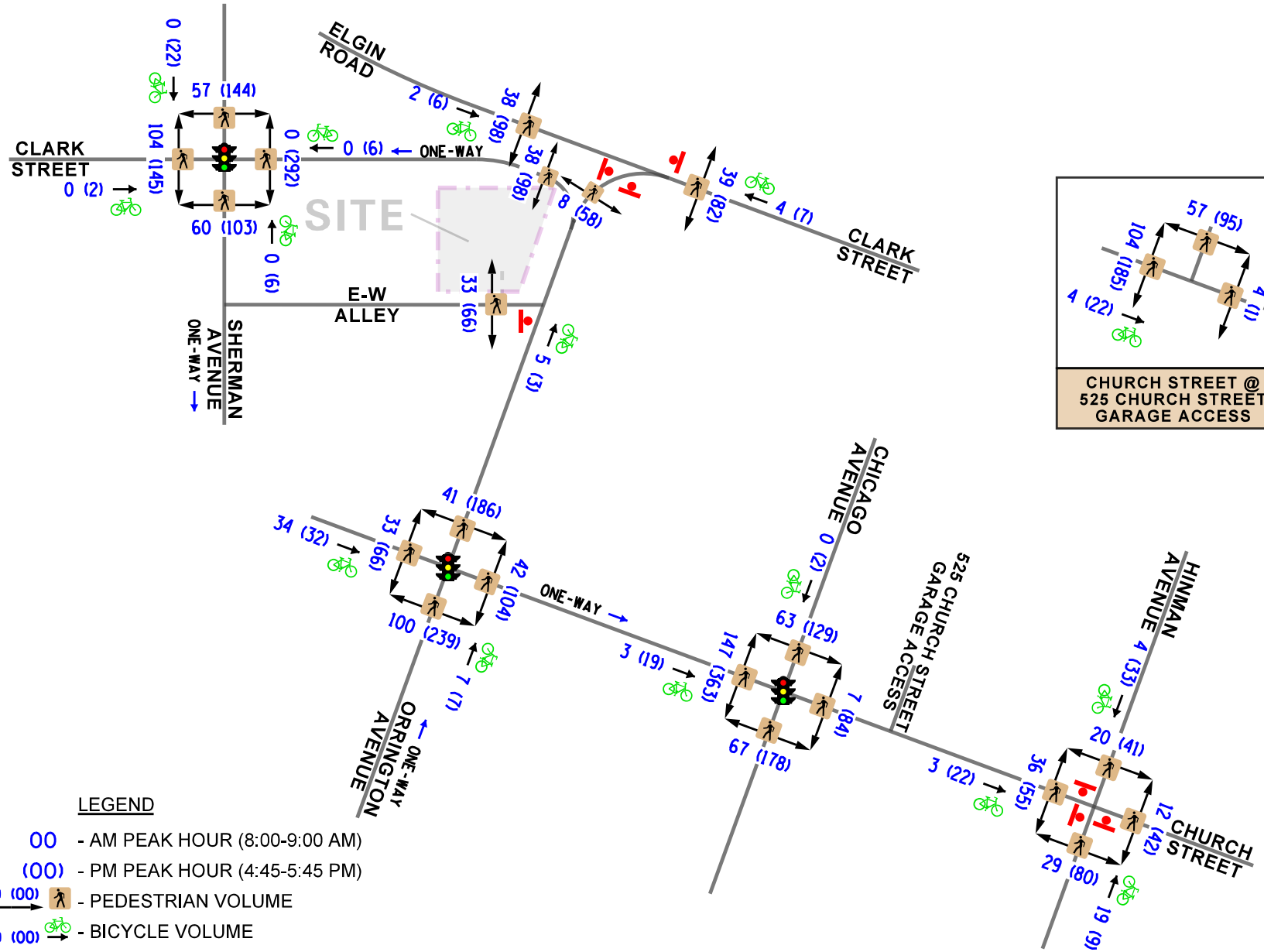
Figure: 5



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Existing Pedestrian and Bicycle Traffic Volumes

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Figure: 6

3. Traffic Characteristics of the Proposed Development

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed development, including the directional distribution and volumes of traffic that it will generate.

Proposed Development Plan

As proposed, the proposed development will be an approximate 150,000 square-foot life science building with a 35-space on-site parking garage and 40 bicycle parking spaces. Access to the garage and loading will be provided off the public alley that runs along the south property line between Orrington Avenue and Sherman Avenue, where it is restricted to exiting (westbound) movements only. The access drive to the parking garage and the loading dock will be located on the south side of the site. The access drive will provide one inbound lane and one outbound lane. Main pedestrian entry to the development will be provided on the north side of the site fronting Clark Street. In addition, approximately 100 parking spaces will be leased at the Church Street parking garage located at 525 Church Street to accommodate overflow parking.

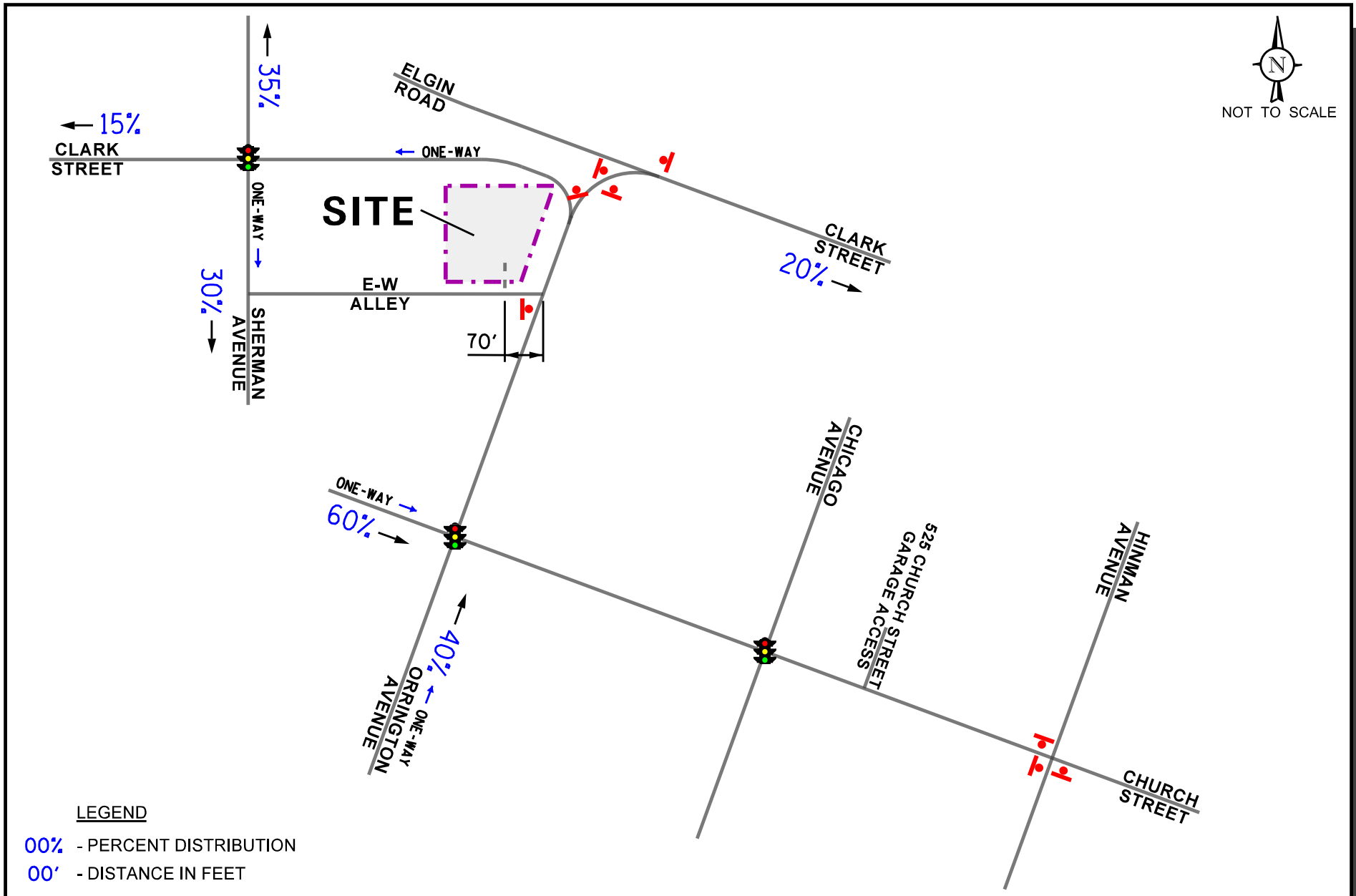
AutoTurn exhibits showing the vehicular and truck maneuvers accessing the building are included in the Appendix.

Directional Distribution

The directions from which site-generated traffic will approach and depart the on-site garage and the 525 Church Street parking garage were estimated based on existing travel patterns, as determined from the traffic counts. **Figures 7 and 8** illustrate the directional distribution of the development-generated traffic to and from the on-site garage and the 525 Church Street parking garage, respectively.

Development Traffic Generation

The number of peak hour vehicle trips estimated to be generated by the proposed development was based on vehicle trip generation rates contained in the *Trip Generation Manual*, 11th Edition, published by the Institute of Transportation Engineers (ITE). It should be noted that the ITE trip rates are based on suburban rates where the primary mode of transportation is the automobile. Given the location of the proposed site within the central business district and its proximity to alternative modes of transportation, the number of additional vehicle trips generated by the development will be reduced. Therefore, the trips were reduced by 50 percent to account for the patrons and employees that will use alternative means of transportation other than the automobile to travel to and from the site. **Table 1** summarizes the trips projected to be generated by the development.



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Estimated Directional Distribution
(On-Site Garage)

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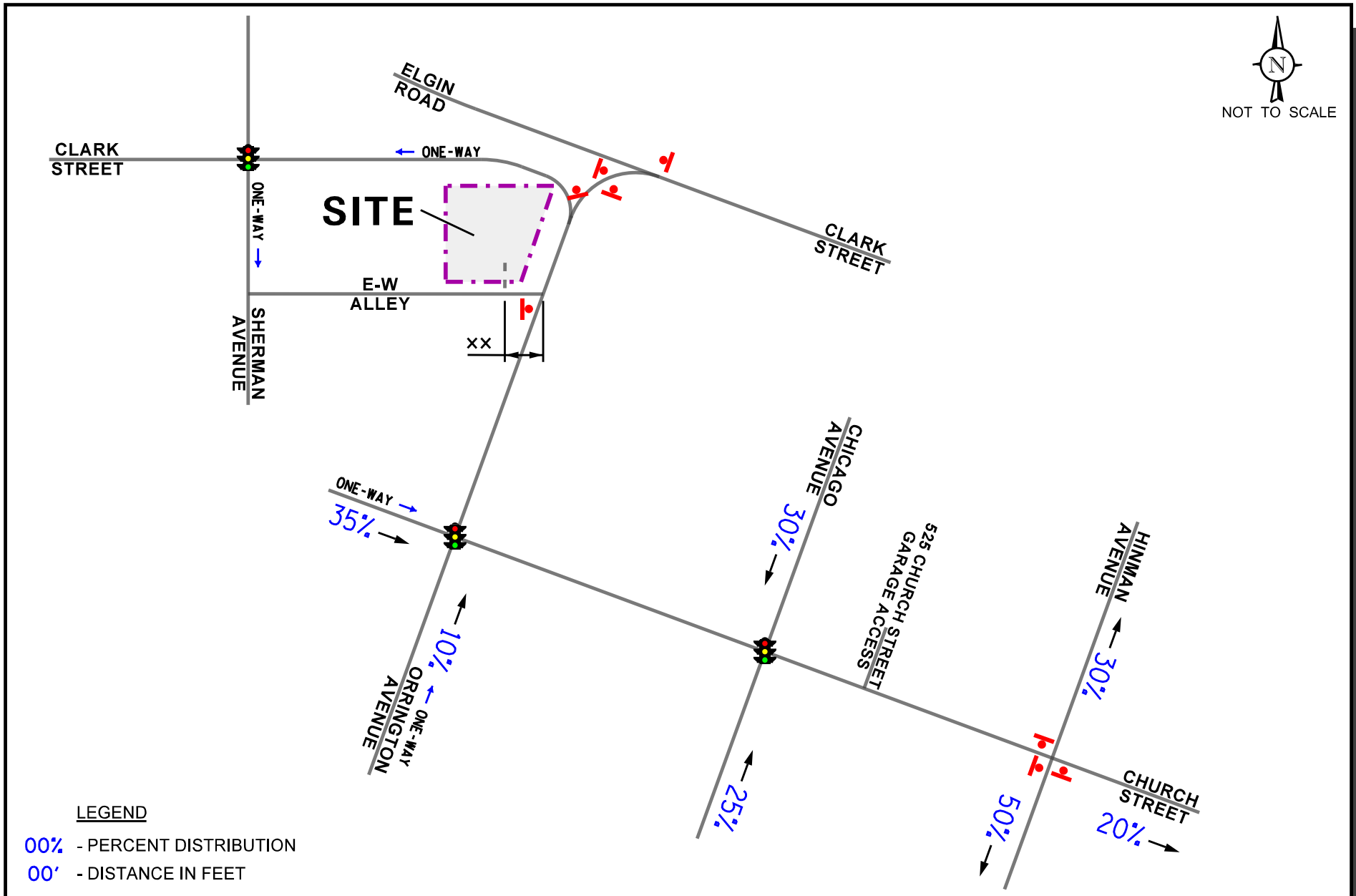
Figure: 7



Life-Science Building
Evanston, Illinois

Estimated Directional Distribution
(525 Church Street Parking Garage)

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Figure: 8

Table 1
SITE-GENERATED TRAFFIC VOLUMES

Land Use/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Daily
	In	Out	Total	In	Out	Total	
Research and Development Center – 150,000 s.f. (LUC 760)[1]							
Gross Trips:	130	28	158	24	128	151	1703
Less 50% Reduction:	*-65*	*-14*	*-79*	*-12*	*-63*	*-75*	*-851*
Total Trips:	65	14	79	12	64	76	852
On-Site Trips:	**23**	**5**	**28**	**4**	**23**	**27**	**298**
525 Church Street Parking Garage Trips:	**42**	**9**	**51**	**8**	**41**	**49**	**554**

Trip generation rates were reduced by 50 percent to account for alternative modes of transportation serving the area and the development.

4. Projected Traffic Conditions

The total projected traffic volumes include the base traffic volumes, increase in background traffic due to ambient growth, and the traffic estimated to be generated by the proposed subject development.

Development Traffic Assignment

The estimated weekday morning and evening peak hour traffic volumes that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution to and from the on-site parking garage and the 525 Church Street parking garage (Figures 7 and 8) and are illustrated in **Figures 9** and **10**, respectively.

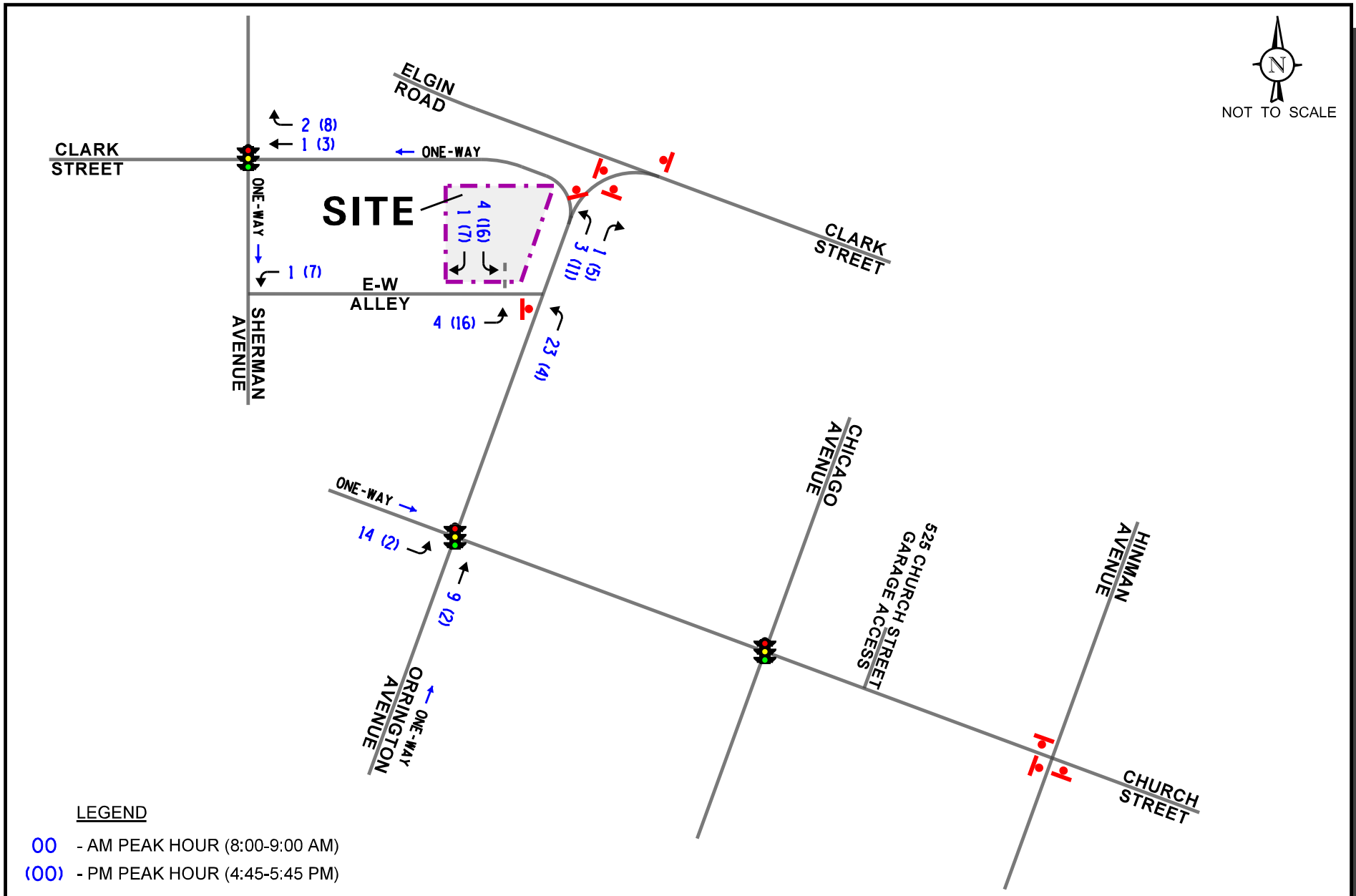
Other Area Growth

The Year 2021 base traffic volumes (Figure 5) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any particular planned development). Based on ADT projections provided by the Chicago Metropolitan Agency for Planning (CMAP), the existing traffic volumes in the study area increased by a compounded growth rate of 0.27 percent per year for six years for a total of 1.7 percent. A copy of the CMAP 2050 projections letter is included in the Appendix.

In addition, the traffic study included the buildout of the following proposed and/or approved area developments:

- An office development approved to be located at 605 Davis Street that is to contain approximately 200,000 square feet of office space.
- A senior living residential development currently under construction at 1815 Ridge Avenue that is to contain approximately 161 units.
- The Emerson development approved to be located at 1900 Sherman Avenue that is to contain approximately 168 age-restricted units.
- A residential development approved to be located at 1555 Ridge Avenue that is to contain approximately 68 residential units.
- A residential development proposed to be located at 1012-1034 Chicago Avenue that is to contain 116 units and approximately 5,000 square feet of ground floor retail space.
- A proposed 18-story mixed-use development at 1621-31 Chicago Avenue that is to contain approximately 180 apartment units, approximately 7,000 square feet of retail space, and 57 parking spaces.

Figure 11 illustrates the Year 2027 no-build traffic volumes.



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Estimated Site-Generated Traffic Volumes
(On-Site Garage)

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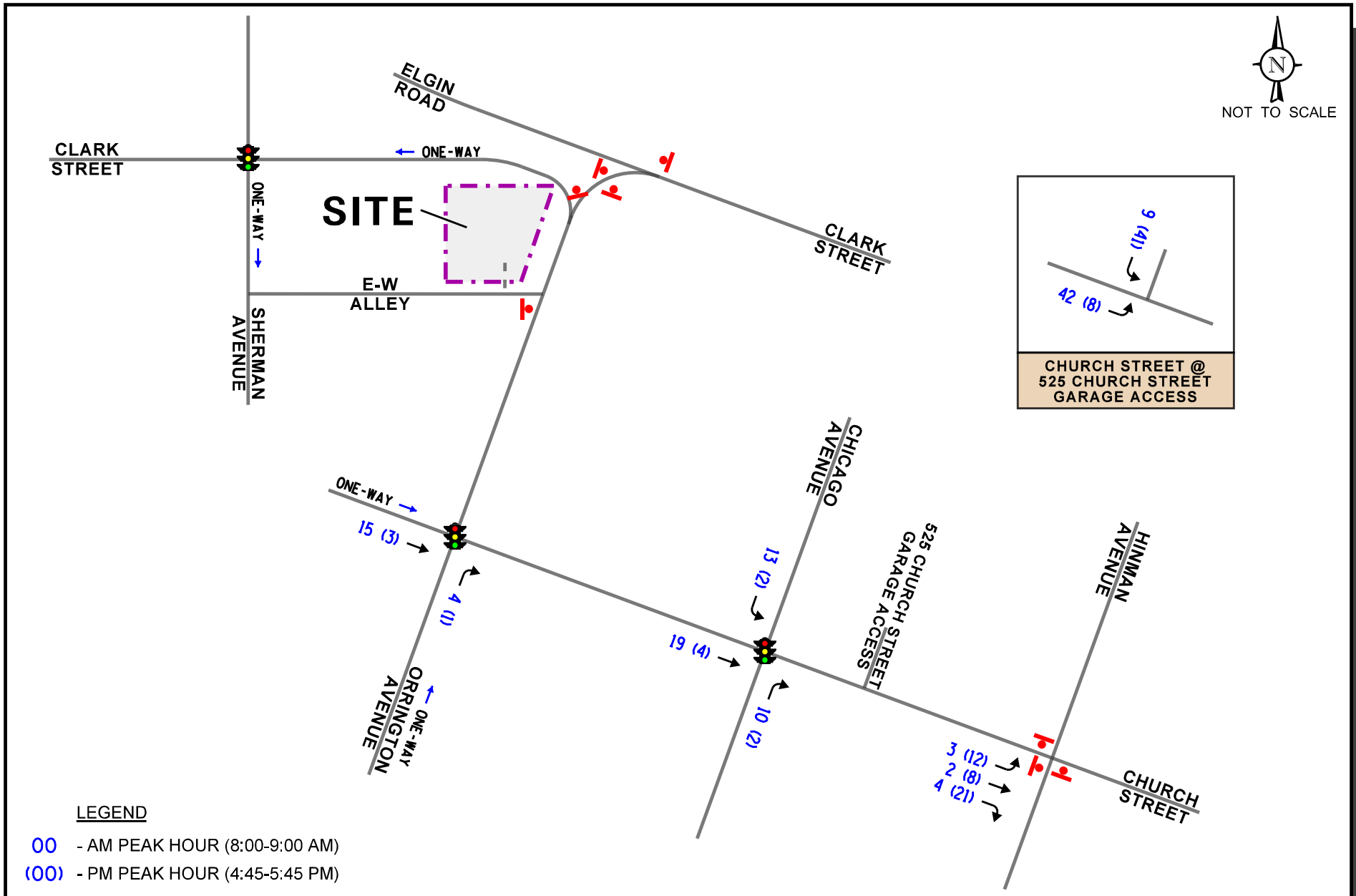
Job No: 21-295 Figure: 9



Life-Science Building
Evanston, Illinois

Estimated Site-Generated Traffic Volumes
(525 Church Street Parking Garage)

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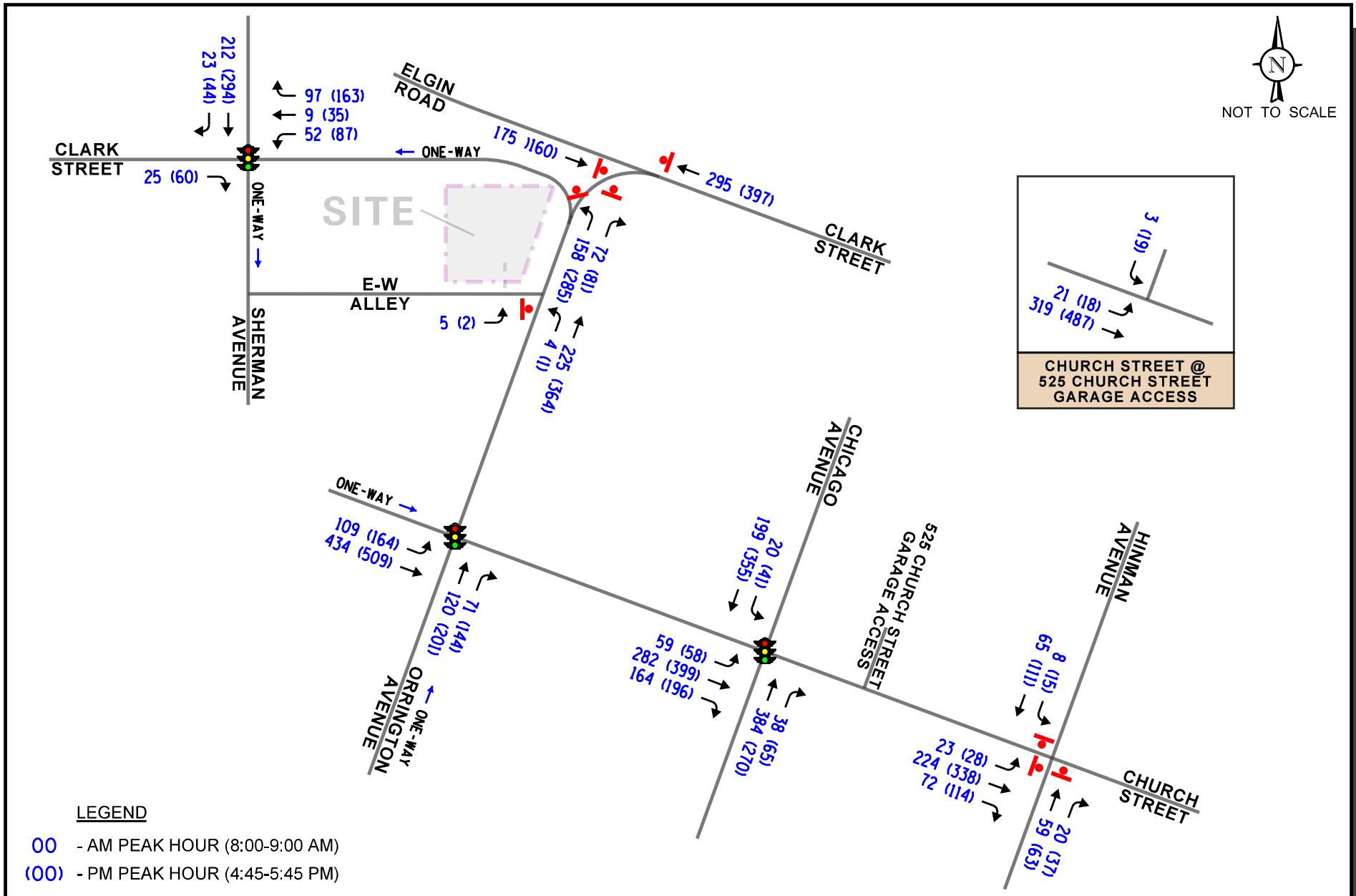
Job No: 21-295 Figure: 10



Life-Science Building
Evanston, Illinois

Year 2027 No-Build Traffic Volumes

KLOA
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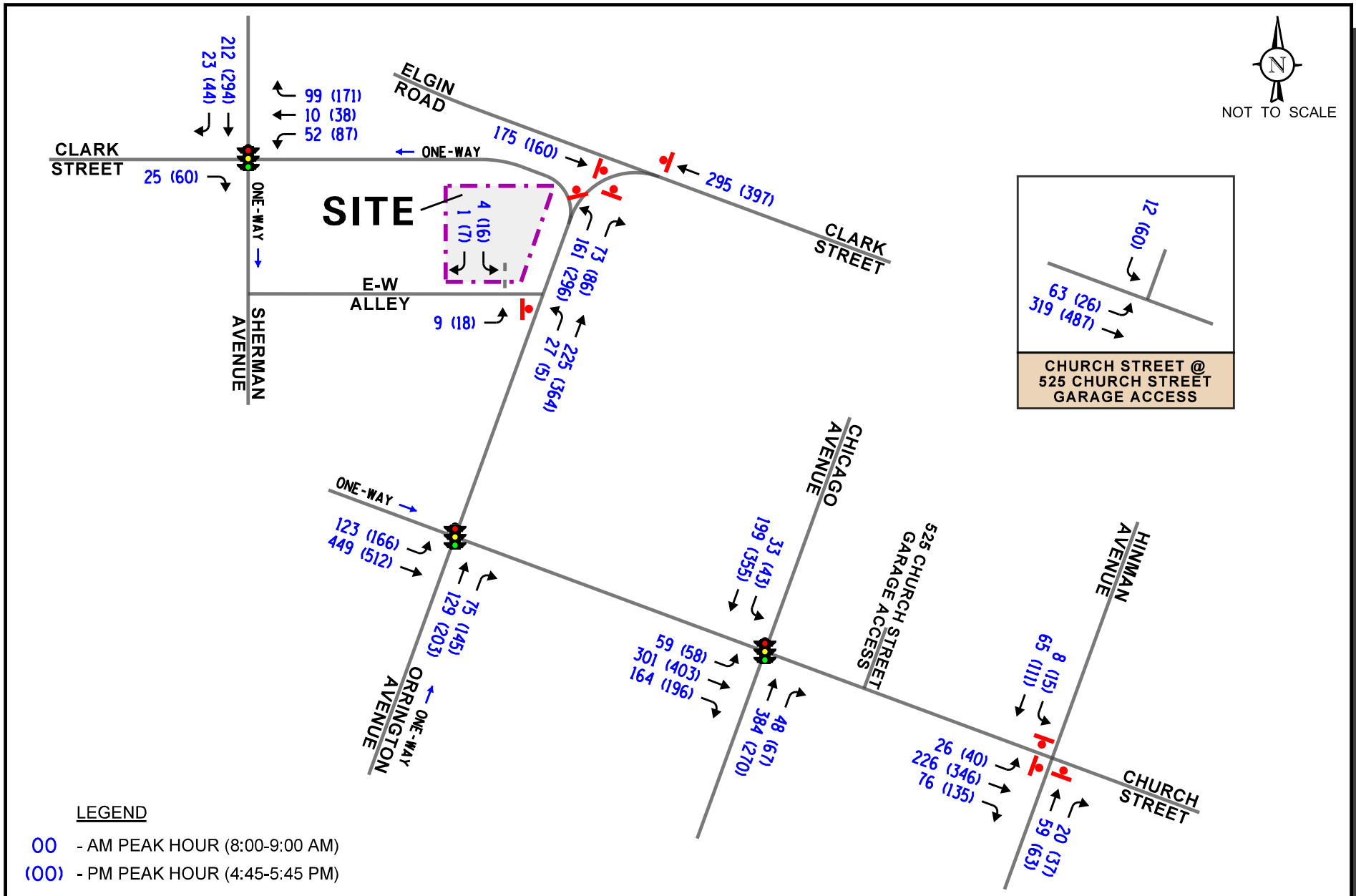
Job No: 21-295 Figure: 11

Total Projected Traffic Volumes

The development-generated traffic was added to the base traffic volumes accounting for background growth to determine the Year 2027 total projected traffic volumes, shown in **Figure 12**. To provide a conservative (worst-case) analysis, no reductions were assumed for the traffic currently generated by the commercial space located on the site.



Life-Science Building
Evanston, Illinois

Year 2027 Total Projected Traffic Volumes

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 21-295 Figure: 12

5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and weekday evening peak hours. The analysis includes conducting capacity analyses to determine how well the roadway system and access drives are projected to operate and whether any roadway improvements or modifications are required.

Traffic Analyses

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning and weekday evening peak hours for the base (Year 2021), no-build (Year 2027), and future projected (Year 2027) traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM), 2010* and analyzed using Synchro/SimTraffic computer software. The analyses for signalized intersections were done using actual cycle lengths and phasings.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in the Appendix of this report.

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the Year 2021 base, Year 2027 no-build, and Year 2027 total projected conditions for the study area intersections are presented in **Tables 2** through **8**. A discussion of the intersections follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 2
CAPACITY ANALYSIS RESULTS
SHERMAN AVENUE WITH CLARK STREET – SIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Base Conditions				
• Overall	B	16.4	B	13.8
• Eastbound Right Turn	A	0.1	A	0.3
• Westbound Approach	A	7.6	B	10.7
○ Westbound Left Turn	A	2.1	A	1.3
○ Westbound Through	B	10.2	B	14.9
• Southbound Approach	C	24.2	B	18.9
○ Southbound Through	C	26.8	C	21.4
○ Southbound Right Turn	A	0.4	A	1.9
No-Build Conditions				
• Overall	B	16.6	B	14.1
• Eastbound Right	A	0.1	A	0.4
• Westbound Approach	A	7.8	B	11.3
○ Westbound Left Turn	A	2.1	A	1.2
○ Westbound Through	B	10.6	B	15.7
• Southbound Approach	C	24.4	B	19.0
○ Southbound Through	C	26.9	C	21.5
○ Southbound Right Turn	A	0.4	A	2.2
Projected Conditions				
• Overall	B	16.6	B	14.3
• Eastbound Right Turn	A	0.1	A	0.4
• Westbound Approach	A	7.9	B	11.8
○ Westbound Left Turn	A	2.1	A	1.2
○ Westbound Through	B	10.7	B	16.2
• Southbound Approach	C	24.4	B	19.0
○ Southbound Through	C	26.9	C	21.5
○ Southbound Right Turn	A	0.4	A	2.2

LOS = Level of Service
Delay is measured in seconds.

Table 3
CAPACITY ANALYSIS RESULTS
ORRINGTON AVENUE WITH CHURCH STREET – SIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Base Conditions				
• Overall	A	9.1	A	9.6
• Eastbound Approach	A	7.2	A	7.0
○ Eastbound Left Turn	A	1.9	A	1.9
○ Eastbound Through	A	8.6	A	8.7
• Northbound Approach	B	14.4	B	14.9
○ Northbound Through	B	18.5	B	19.1
○ Northbound Right Turn	A	6.1	A	8.2
No-Build Conditions				
• Overall	A	9.1	B	10.2
• Eastbound Approach	A	7.4	A	7.1
○ Eastbound Left Turn	A	1.9	A	1.9
○ Eastbound Through	A	8.8	A	8.8
• Northbound Approach	B	13.8	B	16.1
○ Northbound Through	B	18.5	B	19.1
○ Northbound Right Turn	A	5.8	B	11.9
Projected Conditions				
• Overall	A	9.1	B	10.2
• Eastbound Approach	A	7.4	A	7.1
○ Eastbound Left Turn	A	1.9	A	1.9
○ Eastbound Through	A	8.9	A	8.8
• Northbound Approach	B	13.9	B	16.2
○ Northbound Through	B	18.6	B	19.2
○ Northbound Right Turn	A	5.8	B	12.1

LOS = Level of Service
Delay is measured in seconds.

Table 4
CAPACITY ANALYSIS RESULTS
CHICAGO AVENUE WITH CHURCH STREET – SIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Base Conditions				
• Overall	C	20.2	C	24.9
• Northbound Approach	A	9.6	A	9.1
○ Northbound Through	A	9.9	A	8.4
○ Northbound Right Turn	A	6.7	B	12.3
• Southbound Approach	A	8.2	A	9.9
• Eastbound Approach	C	34.0	D	41.6
No-Build Conditions				
• Overall	C	20.9	C	28.3
• Northbound Approach	A	10.0	A	10.0
○ Northbound Through	B	10.2	A	8.7
○ Northbound Right Turn	A	8.4	B	15.3
• Southbound Approach	A	8.6	B	10.5
• Eastbound Approach	D	35.4	D	48.5
Projected Conditions				
• Overall	C	21.7	C	28.7
• Northbound Approach	B	10.3	A	10.1
○ Northbound Through	B	10.2	A	8.7
○ Northbound Right Turn	B	11.6	B	15.7
• Southbound Approach	A	9.0	B	10.6
• Eastbound Approach	D	36.7	D	49.1

LOS = Level of Service
Delay is measured in seconds.

Table 5
CAPACITY ANALYSIS RESULTS
ORRINGTON AVENUE WITH CLARK STREET AND ELGIN ROAD – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Base Conditions				
• Overall	B	10.8	B	14.4
• Westbound Approach (Clark Street)	B	11.1	B	14.8
• Southbound Approach (Elgin Road)	B	10.7	B	11.5
No-Build Conditions				
• Overall	B	10.9	B	14.7
• Westbound Approach (Clark Street)	B	11.2	C	15.2
• Southbound Approach (Elgin Road)	B	10.8	B	11.6
Projected Conditions				
• Overall	B	10.9	C	15.1
• Westbound Approach (Clark Street)	B	11.2	C	15.5
• Southbound Approach (Elgin Road)	B	10.8	B	11.6

LOS = Level of Service
Delay is measured in seconds.

Table 6
CAPACITY ANALYSIS RESULTS
HINMAN AVENUE WITH CHURCH STREET – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Base Conditions				
• Overall	A	9.3	B	10.8
• Eastbound Approach	A	9.7	B	11.6
• Northbound Approach	A	8.3	A	8.8
• Southbound Approach	A	8.5	A	9.3
No-Build Conditions				
• Overall	A	9.7	B	11.5
• Eastbound Approach	B	10.2	B	12.5
• Northbound Approach	A	8.4	A	9.0
• Southbound Approach	A	8.6	A	9.5
Projected Conditions				
• Overall	A	9.7	B	11.9
• Eastbound Approach	B	10.3	B	13.0
• Northbound Approach	A	8.4	A	9.1
• Southbound Approach	A	8.6	A	9.6

LOS = Level of Service
Delay is measured in seconds.

Table 7
CAPACITY ANALYSIS RESULTS
ORRINGTON AVENUE WITH ALLEY – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Base Conditions				
• Northbound Left Turn	A	7.3	A	0.1
• Eastbound Approach	B	10.4	B	10.1
No-Build Conditions				
• Northbound Left Turn	A	7.3	A	0.1
• Eastbound Approach	B	10.5	B	10.2
Projected Conditions				
• Northbound Left Turn	A	7.4	A	0.1
• Eastbound Approach	B	11.2	B	10.4

LOS = Level of Service
Delay is measured in seconds.

Table 8
CAPACITY ANALYSIS RESULTS
CHURCH STREET WITH 525 CHURCH STREET GARAGE ACCESS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Base Conditions				
• Eastbound Left Turn	A	7.5	A	7.6
• Southbound Approach	B	11.3	B	12.2
No-Build Conditions				
• Eastbound Left Turn	A	7.5	A	7.6
• Southbound Approach	B	11.6	B	12.7
Projected Conditions				
• Eastbound Left Turn	A	7.6	A	7.7
• Southbound Approach	B	13.7	B	13.8

LOS = Level of Service
Delay is measured in seconds.

Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identifies any roadway and traffic control improvements necessary to accommodate the development traffic.

Sherman Avenue with Clark Street

The results of the capacity analysis indicate that this signalized intersection currently operates at an overall Level of Service (LOS) B during the weekday morning and weekday evening peak hours. All movements and approaches are operating at LOS C or better during both peak hours.

Under Year 2027 no-build traffic volumes, this intersection will operate at LOS B during the weekday morning and evening peak hours with increases in delay of less than one second. All movements and approaches will operate at the same existing levels of service during both peak hours.

Under Year 2027 projected traffic volumes, this intersection is projected to continue operating at an overall LOS B during both peak hours with limited increases in delay. In addition, the intersection approaches and movements are projected to continue to operate at LOS C or better during both peak hours. As such, the intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the proposed development. Given the low volume of development-generated traffic projected to traverse this intersection and that the increase in overall intersection delay is projected to be approximately only one second, the development is projected to have a limited impact on the operation of this intersection.

Orrington Avenue with Church Street

The results of the capacity analysis indicate that this signalized intersection currently operates at an overall LOS A during the weekday morning and weekday evening peak hours. All movements and approaches are operating at LOS B or better during both peak hours

Under Year 2027 no-build traffic volumes, overall this intersection will operate at LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour with increases in delay of less than one second. All movements and approaches will operate at the same existing levels of service during both peak hours except for the northbound right-turn movements, which will operate at LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour.

Under Year 2027 total projected conditions, overall this intersection will operate at LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour with increases in delay of less than one second. In addition, the intersection approaches and movements are projected to continue to operate at the same levels of service during both peak hours. As such, the intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the proposed development. Given the low volume of development-generated traffic projected to traverse this intersection and that the increase in overall intersection delay is projected to be approximately only one second, the development is projected to have a limited impact on the operation of this intersection.

Chicago Avenue with Church Street

The results of the capacity analysis indicate that this signalized intersection currently operates at an overall LOS C during the weekday morning and weekday evening peak hours. All movements and approaches are operating at LOS C or better during both peak hours except for the eastbound approach, which currently operates at an acceptable LOS D during the weekday evening peak hour.

Under Year 2027 no-build traffic volumes, overall this intersection will continue to operate at LOS C during the weekday morning and evening peak hours with increases in delay of approximately one second and three seconds, respectively. All movements and approaches will operate at LOS C or better during both peak hours except for the eastbound approach, which will operate at LOS D during the morning and evening peak hours with increases in delay of approximately one second and seven seconds, respectively.

Under Year 2027 total projected conditions, overall this intersection will continue to operate at the same levels of service with increases in delay of approximately one second. In addition, the intersection approaches and movements are projected to continue to operate at the same levels of service during both peak hours except for the northbound right-turn movements, which will operate at LOS B during both peak hours. As such, the intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the proposed development. Given the low volume of development-generated traffic projected to traverse this intersection and that the increase in overall intersection delay is projected to be approximately only one second, the development is projected to have a limited impact on the operation of this intersection.

Orrington Avenue with Clark Street and Elgin Road

The results of the capacity analysis indicate that this all-way stop sign controlled intersection currently operates at an overall LOS B during the weekday morning and weekday evening peak hours. The westbound approach (from Clark Street) and the southbound approach (from Elgin Road) are operating at LOS B during both peak hours.

Under Year 2027 no-build conditions, overall this intersection will continue to operate at the same existing levels of service during both peak hours with increases in delay of less than one second. The westbound approach will operate at LOS B during the weekday morning peak hour and LOS C during the weekday evening peak hour with increases in delay of less than one second. In addition, the southbound approach will continue to operate at LOS B during both peak hours with increases in delay of less than one second.

Under Year 2027 total projected conditions, overall this intersection will operate at LOS B during the weekday morning peak hour and LOS C during the weekday evening peak hour with increases in delay of less than one second. The westbound and southbound approaches will continue to operate at the same levels of service during both peak hours with increases in delays of less than one second. As such, the intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the proposed development. Given the low volume of development-traffic projected to traverse this intersection and that the increase in overall intersection delay is projected to be less than one second, the development is projected to have a limited impact on the operation of this intersection.

Hinman Avenue with Church Street

The results of the capacity analysis indicate that this all-way stop sign controlled intersection currently operates at an overall LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour

Under Year 2027 no-build conditions, overall this intersection will continue to operate at the same existing levels of service during both peak hours with increases in delay of less than one second. In addition, all of the approaches will continue to operate at LOS B or better during both peak hours with increases in delay of less than one second.

Under Year 2027 total projected conditions, the intersection overall and all of the approaches will continue to operate at the same levels of service during both peak hours with increases in delay of less than one second. As such, the intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the proposed development. Given the low volume of development-generated traffic projected to traverse this intersection and that the increase in overall intersection delay is projected to be less than one second, the development is projected to have a limited impact on the operation of this intersection.

Orrington Avenue with Alley

The results of the capacity analysis indicate that the northbound left-turn movements are operating at LOS A during the weekday morning and evening peak hours. In addition, the eastbound approach is operating at LOS B during both peak hours.

Under Year 2027 no-build conditions, the northbound left-turn movements and the eastbound approach will continue to operate at LOS B or better during both peak hours with increases in delay of less than one second.

Under Year 2027 total projected conditions, the northbound left-turn movements and the eastbound approach will continue to operate at LOS B or better during both peak hours with increases in delay of less than one second. As such, this intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the development.

Church Street with 525 Church Street Parking Garage Access

The results of the capacity analysis indicate that the eastbound left-turn movements are operating at LOS A during the weekday morning and evening peak hours. In addition, the southbound approach currently operates at LOS B during both peak hours.

Under Year 2027 no-build conditions, the eastbound left-turn movements and the southbound approach will continue to operate at LOS B or better during both peak hours with increases in delay of less than one second.

Under Year 2027 total projected conditions, the northbound left-turn movements and the eastbound approach will continue to operate at LOS B or better during both peak hours with increases in delay of less than two seconds. As such, this intersection has sufficient reserve capacity to accommodate the traffic projected to be generated by the development.

6. Conclusion

This report summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) to assess the impact of the life science building at 1740 Orrington Avenue in Evanston, Illinois. As proposed, the proposed development will be an approximate 150,000 square-foot life science building with a 35-space on-site parking garage and 40 bicycle parking spaces. Based on the preceding analyses and recommendations, the following conclusions were made:

- The existing roadway system has sufficient reserve capacity to accommodate the traffic to be generated by the proposed development. All of the intersections within the study area are projected to continue to operate at a good level of service assuming the additional traffic to be generated by the proposed development and the other area growth. Overall, the proposed development will have a limited impact on the operation of the roadway system and, as such, no roadway improvements and/or traffic control modifications are required.

- Given the location of the site within the central business district and its proximity to alternative modes of transportation, the number of vehicle trips generated by the development will be reduced.

- Access to the on-site parking garage and the loading dock will be provided off the east-west public alley that extends along the south property line between Orrington Avenue and Sherman Avenue

- Approximately 100 parking spaces will be leased at the Church Street parking garage located at 525 Church Street to accommodate overflow parking.

Appendix

Traffic Count Summary Sheets
Preliminary Site Plan
ITE Trip Generation Worksheets
CMAP 2050 Projections Letter
Level of Service Criteria
Capacity Analysis Summary Sheets
AutoTURN Exhibits

Traffic Count Summary Sheets

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 epurguette@kloainc.com

Count Name: Church St with Chicago Ave
Site Code:
Start Date: 10/14/2021
Page No: 1

Turning Movement Data

Start Time	Church St Eastbound						Church St Westbound						Chicago Ave Northbound						Chicago Ave Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	0	9	9	6	18	0	0	1	0	1	1	0	0	51	2	11	53	0	0	26	0	4	26	98
7:15 AM	0	4	11	15	2	30	0	0	1	0	2	1	0	0	43	2	13	45	0	4	25	0	10	29	105
7:30 AM	0	5	22	13	3	40	0	0	0	0	5	0	0	0	68	6	10	74	0	1	23	0	7	24	138
7:45 AM	0	6	20	22	10	48	0	0	0	0	9	0	0	0	60	9	15	69	0	0	44	0	10	44	161
Hourly Total	0	15	62	59	21	136	0	0	2	0	17	2	0	0	222	19	49	241	0	5	118	0	31	123	502
8:00 AM	0	6	35	34	37	75	0	0	0	0	1	0	0	0	65	4	10	69	0	1	36	0	11	37	181
8:15 AM	0	14	39	32	41	85	0	0	0	0	0	0	1	0	92	12	21	105	0	1	45	0	18	46	236
8:30 AM	0	9	45	29	28	83	0	0	0	0	1	0	0	0	83	12	16	95	0	3	47	0	12	50	228
8:45 AM	0	28	10	47	41	85	0	0	0	0	5	0	0	0	81	3	20	84	0	5	48	0	22	53	222
Hourly Total	0	57	129	142	147	328	0	0	0	0	7	0	1	0	321	31	67	353	0	10	176	0	63	186	867
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	9	32	51	47	92	0	0	0	0	21	0	0	1	60	6	40	67	0	2	75	0	47	77	236
4:15 PM	0	11	35	35	64	81	0	0	0	0	18	0	0	0	59	8	35	67	0	3	81	0	28	84	232
4:30 PM	0	11	43	62	51	116	0	0	0	0	21	0	0	0	67	9	40	76	0	5	71	0	25	76	268
4:45 PM	0	11	56	41	74	108	0	0	0	0	20	0	0	0	63	14	44	77	0	4	95	0	30	99	284
Hourly Total	0	42	166	189	236	397	0	0	0	0	80	0	0	1	249	37	159	287	0	14	322	0	130	336	1020
5:00 PM	0	14	54	56	85	124	0	0	0	0	19	0	0	0	59	8	43	67	0	8	79	0	33	87	278
5:15 PM	0	8	36	45	109	89	0	0	0	0	32	0	0	0	58	14	46	72	0	7	77	0	24	84	245
5:30 PM	0	14	51	47	95	112	0	0	0	0	13	0	0	0	63	17	45	80	0	8	84	0	42	92	284
5:45 PM	0	9	36	48	55	93	0	0	0	0	13	0	0	0	65	14	42	79	0	8	89	0	37	97	269
Hourly Total	0	45	177	196	344	418	0	0	0	0	77	0	0	0	245	53	176	298	0	31	329	0	136	360	1076
Grand Total	0	159	534	586	748	1279	0	0	2	0	181	2	1	1	1037	140	451	1179	0	60	945	0	360	1005	3465
Approach %	0.0	12.4	41.8	45.8	-	-	0.0	0.0	100.0	0.0	-	-	0.1	0.1	88.0	11.9	-	-	0.0	6.0	94.0	0.0	-	-	-
Total %	0.0	4.6	15.4	16.9	-	36.9	0.0	0.0	0.1	0.0	-	0.1	0.0	0.0	29.9	4.0	-	34.0	0.0	1.7	27.3	0.0	-	29.0	-
Lights	0	144	495	564	-	1203	0	0	0	0	-	0	1	0	1012	137	-	1150	0	56	892	0	-	948	3301
% Lights	-	90.6	92.7	96.2	-	94.1	-	-	0.0	-	-	0.0	100.0	0.0	97.6	97.9	-	97.5	-	93.3	94.4	-	-	94.3	95.3
Buses	0	12	2	19	-	33	0	0	0	0	-	0	0	0	9	0	-	9	0	1	29	0	-	30	72
% Buses	-	7.5	0.4	3.2	-	2.6	-	-	0.0	-	-	0.0	0.0	0.0	0.9	0.0	-	0.8	-	1.7	3.1	-	-	3.0	2.1
Single-Unit Trucks	0	1	7	3	-	11	0	0	0	0	-	0	0	0	13	3	-	16	0	2	12	0	-	14	41
% Single-Unit Trucks	-	0.6	1.3	0.5	-	0.9	-	-	0.0	-	-	0.0	0.0	0.0	1.3	2.1	-	1.4	-	3.3	1.3	-	-	1.4	1.2
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	0	3	0	-	3	0	1	5	0	-	6	10
% Articulated Trucks	-	0.0	0.2	0.0	-	0.1	-	-	0.0	-	-	0.0	0.0	0.0	0.3	0.0	-	0.3	-	1.7	0.5	-	-	0.6	0.3
Bicycles on Road	0	2	29	0	-	31	0	0	2	0	-	2	0	1	0	0	-	1	0	0	7	0	-	7	41

Kenig Lindgren O'Hara Aboona, Inc.
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(847)518-9990 epurguette@kloainc.com

Count Name: Church St with Chicago Ave
Site Code:
Start Date: 10/14/2021

Turning Movement Peak Hour Data (8:00 AM)

Start Time	Church St Eastbound						Church St Westbound						Chicago Ave Northbound						Chicago Ave Southbound						
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Int. Total
8:00 AM	0	6	35	34	37	75	0	0	0	0	1	0	0	0	65	4	10	69	0	1	36	0	11	37	181
8:15 AM	0	14	39	32	41	85	0	0	0	0	0	0	1	0	92	12	21	105	0	1	45	0	18	46	236
8:30 AM	0	9	45	29	28	83	0	0	0	0	1	0	0	0	83	12	16	95	0	3	47	0	12	50	228
8:45 AM	0	28	10	47	41	85	0	0	0	0	5	0	0	0	81	3	20	84	0	5	48	0	22	53	222
Total	0	57	129	142	147	328	0	0	0	0	7	0	1	0	321	31	67	353	0	10	176	0	63	186	867
Approach %	0.0	17.4	39.3	43.3	-	-	0.0	0.0	0.0	0.0	-	-	0.3	0.0	90.9	8.8	-	-	0.0	5.4	94.6	0.0	-	-	-
Total %	0.0	6.6	14.9	16.4	-	37.8	0.0	0.0	0.0	0.0	-	0.0	0.1	0.0	37.0	3.6	-	40.7	0.0	1.2	20.3	0.0	-	21.5	-
PHF	0.000	0.509	0.717	0.755	-	0.965	0.000	0.000	0.000	0.000	-	0.000	0.250	0.000	0.872	0.646	-	0.840	0.000	0.500	0.917	0.000	-	0.877	0.918
Lights	0	52	122	138	-	312	0	0	0	0	-	0	1	0	314	30	-	345	0	8	165	0	-	173	830
% Lights	-	91.2	94.6	97.2	-	95.1	-	-	-	-	-	-	100.0	-	97.8	96.8	-	97.7	-	80.0	93.8	-	-	93.0	95.7
Buses	0	3	1	4	-	8	0	0	0	0	-	0	0	0	1	0	-	1	0	0	5	0	-	5	14
% Buses	-	5.3	0.8	2.8	-	2.4	-	-	-	-	-	-	0.0	-	0.3	0.0	-	0.3	-	0.0	2.8	-	-	2.7	1.6
Single-Unit Trucks	0	1	4	0	-	5	0	0	0	0	-	0	0	0	5	1	-	6	0	1	5	0	-	6	17
% Single-Unit Trucks	-	1.8	3.1	0.0	-	1.5	-	-	-	-	-	-	0.0	-	1.6	3.2	-	1.7	-	10.0	2.8	-	-	3.2	2.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	1	1	0	-	2	3
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	-	-	-	-	-	0.0	-	0.3	0.0	-	0.3	-	10.0	0.6	-	-	1.1	0.3
Bicycles on Road	0	1	2	0	-	3	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	3
% Bicycles on Road	-	1.8	1.6	0.0	-	0.9	-	-	-	-	-	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	-	0.0	0.3
Pedestrians	-	-	-	-	147	-	-	-	-	-	7	-	-	-	-	-	67	-	-	-	-	-	63	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Count Name: Church St with Chicago Ave
Site Code:
Start Date: 10/14/2021

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Church St Eastbound						Church St Westbound						Chicago Ave Northbound						Chicago Ave Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:45 PM	0	11	56	41	74	108	0	0	0	0	20	0	0	0	63	14	44	77	0	4	95	0	30	99	284
5:00 PM	0	14	54	56	85	124	0	0	0	0	19	0	0	0	59	8	43	67	0	8	79	0	33	87	278
5:15 PM	0	8	36	45	109	89	0	0	0	0	32	0	0	0	58	14	46	72	0	7	77	0	24	84	245
5:30 PM	0	14	51	47	95	112	0	0	0	0	13	0	0	0	63	17	45	80	0	8	84	0	42	92	284
Total	0	47	197	189	363	433	0	0	0	0	84	0	0	0	243	53	178	296	0	27	335	0	129	362	1091
Approach %	0.0	10.9	45.5	43.6	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	82.1	17.9	-	-	0.0	7.5	92.5	0.0	-	-	-
Total %	0.0	4.3	18.1	17.3	-	39.7	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	22.3	4.9	-	27.1	0.0	2.5	30.7	0.0	-	33.2	-
PHF	0.000	0.839	0.879	0.844	-	0.873	0.000	0.000	0.000	0.000	-	0.000	0.000	0.000	0.964	0.779	-	0.925	0.000	0.844	0.882	0.000	-	0.914	0.960
Lights	0	43	178	185	-	406	0	0	0	0	-	0	0	0	240	53	-	293	0	26	326	0	-	352	1051
% Lights	-	91.5	90.4	97.9	-	93.8	-	-	-	-	-	-	-	-	98.8	100.0	-	99.0	-	96.3	97.3	-	-	97.2	96.3
Buses	0	3	0	3	-	6	0	0	0	0	-	0	0	0	3	0	-	3	0	0	5	0	-	5	14
% Buses	-	6.4	0.0	1.6	-	1.4	-	-	-	-	-	-	-	-	1.2	0.0	-	1.0	-	0.0	1.5	-	-	1.4	1.3
Single-Unit Trucks	0	0	1	1	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	3
% Single-Unit Trucks	-	0.0	0.5	0.5	-	0.5	-	-	-	-	-	-	-	-	0.0	0.0	-	0.0	-	3.7	0.0	-	-	0.3	0.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	2
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	-	-	-	-	-	-	-	0.0	0.0	-	0.0	-	0.0	0.6	-	-	0.6	0.2
Bicycles on Road	0	1	18	0	-	19	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	21
% Bicycles on Road	-	2.1	9.1	0.0	-	4.4	-	-	-	-	-	-	-	-	0.0	0.0	-	0.0	-	0.0	0.6	-	-	0.6	1.9
Pedestrians	-	-	-	-	363	-	-	-	-	-	84	-	-	-	-	-	178	-	-	-	-	-	129	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Count Name: Church St with Hinman Ave
Site Code:
Start Date: 10/14/2021
Page No: 1

Turning Movement Data

Start Time	Church St Eastbound					Church St Westbound						Hinman Ave Northbound						Hinman Ave Southbound						
	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	0	0	4	4	8	0	0	1	0	5	1	0	0	4	0	4	4	0	0	4	0	1	4	17
7:15 AM	0	2	5	5	12	0	0	0	0	1	0	0	0	4	2	3	6	0	0	2	0	5	2	20
7:30 AM	0	0	11	6	17	0	0	0	0	1	0	0	0	12	2	7	14	0	1	8	0	4	9	40
7:45 AM	0	0	10	12	22	0	0	0	0	4	0	0	0	7	0	7	7	0	0	12	0	6	12	41
Hourly Total	0	2	30	27	59	0	0	1	0	11	1	0	0	27	4	21	31	0	1	26	0	16	27	118
8:00 AM	0	4	23	15	42	0	0	0	0	3	0	0	1	8	6	4	15	0	1	9	0	5	10	67
8:15 AM	0	7	15	18	40	0	0	0	0	5	0	0	0	20	3	7	23	0	1	22	0	5	23	86
8:30 AM	0	4	12	27	43	0	0	0	0	2	0	0	0	20	7	13	27	0	3	20	0	6	23	93
8:45 AM	0	5	9	9	23	0	0	0	0	2	0	0	0	27	4	5	31	0	3	17	0	4	20	74
Hourly Total	0	20	59	69	148	0	0	0	0	12	0	0	1	75	20	29	96	0	8	68	0	20	76	320
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	3	22	12	37	0	0	0	0	6	0	0	0	16	5	13	21	0	4	23	0	15	27	85
4:15 PM	0	3	23	13	39	0	0	0	0	10	0	0	0	13	2	16	15	0	7	17	0	6	24	78
4:30 PM	0	7	30	28	65	0	0	0	0	7	0	1	0	14	2	15	17	0	3	21	0	4	24	106
4:45 PM	0	6	31	29	66	0	0	1	0	8	1	0	0	19	11	26	30	0	3	30	0	6	33	130
Hourly Total	0	19	106	82	207	0	0	1	0	31	1	1	0	62	20	70	83	0	17	91	0	31	108	399
5:00 PM	0	4	36	31	71	0	0	1	0	13	1	0	0	15	4	15	19	0	7	35	1	12	43	134
5:15 PM	0	3	32	25	60	0	0	2	0	10	2	0	0	19	12	20	31	0	1	45	1	8	47	140
5:30 PM	0	13	36	26	75	0	0	2	0	11	2	0	0	17	9	19	26	0	4	27	1	15	32	135
5:45 PM	0	4	25	20	49	0	0	1	0	13	1	0	0	15	5	19	20	0	3	22	0	18	25	95
Hourly Total	0	24	129	102	255	0	0	6	0	47	6	0	0	66	30	73	96	0	15	129	3	53	147	504
Grand Total	0	65	324	280	669	0	0	8	0	101	8	1	1	230	74	193	306	0	41	314	3	120	358	1341
Approach %	0.0	9.7	48.4	41.9	-	0.0	0.0	100.0	0.0	-	-	0.3	0.3	75.2	24.2	-	-	0.0	11.5	87.7	0.8	-	-	-
Total %	0.0	4.8	24.2	20.9	49.9	0.0	0.0	0.6	0.0	-	0.6	0.1	0.1	17.2	5.5	-	22.8	0.0	3.1	23.4	0.2	-	26.7	-
Lights	0	59	293	272	624	0	0	0	0	-	0	1	0	196	71	-	268	0	41	263	0	-	304	1196
% Lights	-	90.8	90.4	97.1	93.3	-	-	0.0	-	-	0.0	100.0	0.0	85.2	95.9	-	87.6	-	100.0	83.8	0.0	-	84.9	89.2
Buses	0	0	2	1	3	0	0	0	0	-	0	0	0	0	1	-	1	0	0	0	0	-	0	4
% Buses	-	0.0	0.6	0.4	0.4	-	-	0.0	-	-	0.0	0.0	0.0	0.0	1.4	-	0.3	-	0.0	0.0	0.0	-	0.0	0.3
Single-Unit Trucks	0	1	4	3	8	0	0	0	0	-	0	0	0	1	1	-	2	0	0	1	0	-	1	11
% Single-Unit Trucks	-	1.5	1.2	1.1	1.2	-	-	0.0	-	-	0.0	0.0	0.0	0.4	1.4	-	0.7	-	0.0	0.3	0.0	-	0.3	0.8
Articulated Trucks	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	0.0	0.0	-	-	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	5	25	4	34	0	0	8	0	-	8	0	1	33	1	-	35	0	0	50	3	-	53	130
% Bicycles on Road	-	7.7	7.7	1.4	5.1	-	-	100.0	-	-	100.0	0.0	100.0	14.3	1.4	-	11.4	-	0.0	15.9	100.0	-	14.8	9.7
Pedestrians	-	-	-	-	-	-	-	-	-	101	-	-	-	-	-	193	-	-	-	-	-	120	-	-

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9575 W. Higgins Rd., Suite 400

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Count Name: Church St with Hinman Ave
Site Code:
Start Date: 10/14/2021

Turning Movement Peak Hour Data (8:00 AM)

Start Time	Church St Eastbound					Church St Westbound						Hinman Ave Northbound						Hinman Ave Southbound						
	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Int. Total
8:00 AM	0	4	23	15	42	0	0	0	0	3	0	0	1	8	6	4	15	0	1	9	0	5	10	67
8:15 AM	0	7	15	18	40	0	0	0	0	5	0	0	0	20	3	7	23	0	1	22	0	5	23	86
8:30 AM	0	4	12	27	43	0	0	0	0	2	0	0	0	20	7	13	27	0	3	20	0	6	23	93
8:45 AM	0	5	9	9	23	0	0	0	0	2	0	0	0	27	4	5	31	0	3	17	0	4	20	74
Total	0	20	59	69	148	0	0	0	0	12	0	0	1	75	20	29	96	0	8	68	0	20	76	320
Approach %	0.0	13.5	39.9	46.6	-	0.0	0.0	0.0	0.0	-	-	0.0	1.0	78.1	20.8	-	-	0.0	10.5	89.5	0.0	-	-	-
Total %	0.0	6.3	18.4	21.6	46.3	0.0	0.0	0.0	0.0	-	0.0	0.0	0.3	23.4	6.3	-	30.0	0.0	2.5	21.3	0.0	-	23.8	-
PHF	0.000	0.714	0.641	0.639	0.860	0.000	0.000	0.000	0.000	-	0.000	0.000	0.250	0.694	0.714	-	0.774	0.000	0.667	0.773	0.000	-	0.826	0.860
Lights	0	18	55	68	141	0	0	0	0	-	0	0	0	57	18	-	75	0	8	64	0	-	72	288
% Lights	-	90.0	93.2	98.6	95.3	-	-	-	-	-	-	-	0.0	76.0	90.0	-	78.1	-	100.0	94.1	-	-	94.7	90.0
Buses	0	0	1	0	1	0	0	0	0	-	0	0	0	0	1	-	1	0	0	0	0	-	0	2
% Buses	-	0.0	1.7	0.0	0.7	-	-	-	-	-	-	-	0.0	0.0	5.0	-	1.0	-	0.0	0.0	-	-	0.0	0.6
Single-Unit Trucks	0	0	2	1	3	0	0	0	0	-	0	0	0	0	1	-	1	0	0	0	0	-	0	4
% Single-Unit Trucks	-	0.0	3.4	1.4	2.0	-	-	-	-	-	-	-	0.0	0.0	5.0	-	1.0	-	0.0	0.0	-	-	0.0	1.3
Articulated Trucks	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	0.0	0.0	-	-	-	-	-	-	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	2	1	0	3	0	0	0	0	-	0	0	1	18	0	-	19	0	0	4	0	-	4	26
% Bicycles on Road	-	10.0	1.7	0.0	2.0	-	-	-	-	-	-	-	100.0	24.0	0.0	-	19.8	-	0.0	5.9	-	-	5.3	8.1
Pedestrians	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	29	-	-	-	-	-	20	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Count Name: Church St with Hinman Ave
Site Code:
Start Date: 10/14/2021

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Church St Eastbound					Church St Westbound						Hinman Ave Northbound						Hinman Ave Southbound						
	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Int. Total
4:45 PM	0	6	31	29	66	0	0	1	0	8	1	0	0	19	11	26	30	0	3	30	0	6	33	130
5:00 PM	0	4	36	31	71	0	0	1	0	13	1	0	0	15	4	15	19	0	7	35	1	12	43	134
5:15 PM	0	3	32	25	60	0	0	2	0	10	2	0	0	19	12	20	31	0	1	45	1	8	47	140
5:30 PM	0	13	36	26	75	0	0	2	0	11	2	0	0	17	9	19	26	0	4	27	1	15	32	135
Total	0	26	135	111	272	0	0	6	0	42	6	0	0	70	36	80	106	0	15	137	3	41	155	539
Approach %	0.0	9.6	49.6	40.8	-	0.0	0.0	100.0	0.0	-	-	0.0	0.0	66.0	34.0	-	-	0.0	9.7	88.4	1.9	-	-	-
Total %	0.0	4.8	25.0	20.6	50.5	0.0	0.0	1.1	0.0	-	1.1	0.0	0.0	13.0	6.7	-	19.7	0.0	2.8	25.4	0.6	-	28.8	-
PHF	0.000	0.500	0.938	0.895	0.907	0.000	0.000	0.750	0.000	-	0.750	0.000	0.000	0.921	0.750	-	0.855	0.000	0.536	0.761	0.750	-	0.824	0.963
Lights	0	24	117	107	248	0	0	0	0	-	0	0	0	60	36	-	96	0	15	107	0	-	122	466
% Lights	-	92.3	86.7	96.4	91.2	-	-	0.0	-	-	0.0	-	-	85.7	100.0	-	90.6	-	100.0	78.1	0.0	-	78.7	86.5
Buses	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	0.0	0.0	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	1	1	2	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	3
% Single-Unit Trucks	-	0.0	0.7	0.9	0.7	-	-	0.0	-	-	0.0	-	-	1.4	0.0	-	0.9	-	0.0	0.0	0.0	-	0.0	0.6
Articulated Trucks	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	0.0	0.0	-	-	0.0	-	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	2	17	3	22	0	0	6	0	-	6	0	0	9	0	-	9	0	0	30	3	-	33	70
% Bicycles on Road	-	7.7	12.6	2.7	8.1	-	-	100.0	-	-	100.0	-	-	12.9	0.0	-	8.5	-	0.0	21.9	100.0	-	21.3	13.0
Pedestrians	-	-	-	-	-	-	-	-	-	42	-	-	-	-	-	80	-	-	-	-	-	41	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Count Name: Church St with Parking Lot Drives
Site Code:
Start Date: 10/14/2021
Page No: 1

Turning Movement Data

Start Time	Church St Eastbound					Church St Westbound					Parking Lot Drives Southbound					Int. Total
	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	
7:00 AM	0	2	10	2	12	0	1	0	0	1	0	0	0	3	0	13
7:15 AM	0	8	11	6	19	0	2	0	0	2	0	0	0	6	0	21
7:30 AM	0	12	19	8	31	0	0	0	0	0	0	3	0	8	3	34
7:45 AM	0	3	40	13	43	0	0	0	0	0	0	3	0	13	3	46
Hourly Total	0	25	80	29	105	0	3	0	0	3	0	6	0	30	6	114
8:00 AM	0	4	34	29	38	0	1	0	0	1	0	1	0	12	1	40
8:15 AM	0	6	44	28	50	0	0	0	0	0	0	1	0	17	1	51
8:30 AM	0	8	50	26	58	0	0	0	1	0	0	1	0	11	1	59
8:45 AM	0	3	9	21	12	0	0	0	3	0	0	0	0	17	0	12
Hourly Total	0	21	137	104	158	0	1	0	4	1	0	3	0	57	3	162
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	36	35	36	0	0	0	0	0	0	3	0	23	3	39
4:15 PM	0	3	46	17	49	0	0	0	0	0	0	3	0	21	3	52
4:30 PM	0	3	56	33	59	0	0	0	1	0	0	4	0	19	4	63
4:45 PM	1	3	67	42	71	0	1	0	0	1	0	6	0	21	6	78
Hourly Total	1	9	205	127	215	0	1	0	1	1	0	16	0	84	16	232
5:00 PM	0	5	65	48	70	0	1	0	1	1	0	3	0	27	3	74
5:15 PM	0	4	63	60	67	0	2	0	0	2	0	6	0	17	6	75
5:30 PM	0	5	63	35	68	0	0	0	0	0	0	4	0	30	4	72
5:45 PM	0	3	64	36	67	0	0	0	0	0	1	3	0	29	4	71
Hourly Total	0	17	255	179	272	0	3	0	1	3	1	16	0	103	17	292
Grand Total	1	72	677	439	750	0	8	0	6	8	1	41	0	274	42	800
Approach %	0.1	9.6	90.3	-	-	0.0	100.0	0.0	-	-	2.4	97.6	0.0	-	-	-
Total %	0.1	9.0	84.6	-	93.8	0.0	1.0	0.0	-	1.0	0.1	5.1	0.0	-	5.3	-
Lights	1	72	619	-	692	0	0	0	-	0	1	41	0	-	42	734
% Lights	100.0	100.0	91.4	-	92.3	-	0.0	-	-	0.0	100.0	100.0	-	-	100.0	91.8
Buses	0	0	3	-	3	0	0	0	-	0	0	0	0	-	0	3
% Buses	0.0	0.0	0.4	-	0.4	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.4
Single-Unit Trucks	0	0	12	-	12	0	0	0	-	0	0	0	0	-	0	12
% Single-Unit Trucks	0.0	0.0	1.8	-	1.6	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	1.5
Articulated Trucks	0	0	1	-	1	0	0	0	-	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.1	-	0.1	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	0	42	-	42	0	8	0	-	8	0	0	0	-	0	50
% Bicycles on Road	0.0	0.0	6.2	-	5.6	-	100.0	-	-	100.0	0.0	0.0	-	-	0.0	6.3
Pedestrians	-	-	-	439	-	-	-	-	6	-	-	-	-	274	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

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Count Name: Church St with Parking Lot Drives
Site Code:
Start Date: 10/14/2021

Turning Movement Peak Hour Data (8:00 AM)

Start Time	Church St Eastbound					Church St Westbound					Parking Lot Drives Southbound					
	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
8:00 AM	0	4	34	29	38	0	1	0	0	1	0	1	0	12	1	40
8:15 AM	0	6	44	28	50	0	0	0	0	0	0	1	0	17	1	51
8:30 AM	0	8	50	26	58	0	0	0	1	0	0	1	0	11	1	59
8:45 AM	0	3	9	21	12	0	0	0	3	0	0	0	0	17	0	12
Total	0	21	137	104	158	0	1	0	4	1	0	3	0	57	3	162
Approach %	0.0	13.3	86.7	-	-	0.0	100.0	0.0	-	-	0.0	100.0	0.0	-	-	-
Total %	0.0	13.0	84.6	-	97.5	0.0	0.6	0.0	-	0.6	0.0	1.9	0.0	-	1.9	-
PHF	0.000	0.656	0.685	-	0.681	0.000	0.250	0.000	-	0.250	0.000	0.750	0.000	-	0.750	0.686
Lights	0	21	127	-	148	0	0	0	-	0	0	3	0	-	3	151
% Lights	-	100.0	92.7	-	93.7	-	0.0	-	-	0.0	-	100.0	-	-	100.0	93.2
Buses	0	0	1	-	1	0	0	0	-	0	0	0	0	-	0	1
% Buses	-	0.0	0.7	-	0.6	-	0.0	-	-	0.0	-	0.0	-	-	0.0	0.6
Single-Unit Trucks	0	0	5	-	5	0	0	0	-	0	0	0	0	-	0	5
% Single-Unit Trucks	-	0.0	3.6	-	3.2	-	0.0	-	-	0.0	-	0.0	-	-	0.0	3.1
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	-	0.0	-	-	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	4	-	4	0	1	0	-	1	0	0	0	-	0	5
% Bicycles on Road	-	0.0	2.9	-	2.5	-	100.0	-	-	100.0	-	0.0	-	-	0.0	3.1
Pedestrians	-	-	-	104	-	-	-	-	4	-	-	-	-	57	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

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Count Name: Church St with Parking Lot Drives
Site Code:
Start Date: 10/14/2021

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Church St Eastbound					Church St Westbound					Parking Lot Drives Southbound					
	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
4:45 PM	1	3	67	42	71	0	1	0	0	1	0	6	0	21	6	78
5:00 PM	0	5	65	48	70	0	1	0	1	1	0	3	0	27	3	74
5:15 PM	0	4	63	60	67	0	2	0	0	2	0	6	0	17	6	75
5:30 PM	0	5	63	35	68	0	0	0	0	0	0	4	0	30	4	72
Total	1	17	258	185	276	0	4	0	1	4	0	19	0	95	19	299
Approach %	0.4	6.2	93.5	-	-	0.0	100.0	0.0	-	-	0.0	100.0	0.0	-	-	-
Total %	0.3	5.7	86.3	-	92.3	0.0	1.3	0.0	-	1.3	0.0	6.4	0.0	-	6.4	-
PHF	0.250	0.850	0.963	-	0.972	0.000	0.500	0.000	-	0.500	0.000	0.792	0.000	-	0.792	0.958
Lights	1	17	233	-	251	0	0	0	-	0	0	19	0	-	19	270
% Lights	100.0	100.0	90.3	-	90.9	-	0.0	-	-	0.0	-	100.0	-	-	100.0	90.3
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	0.0	-	0.0	-	-	0.0	-	0.0	-	-	0.0	0.0
Single-Unit Trucks	0	0	3	-	3	0	0	0	-	0	0	0	0	-	0	3
% Single-Unit Trucks	0.0	0.0	1.2	-	1.1	-	0.0	-	-	0.0	-	0.0	-	-	0.0	1.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	0.0	-	0.0	-	-	0.0	-	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	22	-	22	0	4	0	-	4	0	0	0	-	0	26
% Bicycles on Road	0.0	0.0	8.5	-	8.0	-	100.0	-	-	100.0	-	0.0	-	-	0.0	8.7
Pedestrians	-	-	-	185	-	-	-	-	1	-	-	-	-	95	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

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Count Name: Clark St with Sherman Ave
Site Code:
Start Date: 10/14/2021
Page No: 1

Turning Movement Data

Start Time	Clark St Eastbound						Clark St Westbound						Sherman Ave Northbound						Sherman Ave Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	0	0	5	5	5	0	2	0	2	4	4	0	0	0	0	5	0	0	0	18	3	2	21	30
7:15 AM	0	0	0	7	22	7	0	4	3	5	6	12	0	0	0	0	8	0	0	0	19	4	2	23	42
7:30 AM	0	0	0	5	7	5	0	5	1	7	5	13	0	0	0	0	4	0	0	0	31	9	2	40	58
7:45 AM	0	0	0	6	15	6	0	3	2	10	13	15	0	0	0	0	20	0	0	0	49	11	9	60	81
Hourly Total	0	0	0	23	49	23	0	14	6	24	28	44	0	0	0	0	37	0	0	0	117	27	15	144	211
8:00 AM	0	0	0	5	21	5	0	6	2	7	0	15	0	0	0	0	18	0	0	0	50	2	17	52	72
8:15 AM	1	0	0	5	22	6	0	4	0	16	0	20	0	0	0	0	12	0	0	0	49	8	15	57	83
8:30 AM	0	0	0	10	33	10	0	13	1	21	0	35	0	0	0	0	16	0	1	0	60	5	12	66	111
8:45 AM	0	1	0	5	28	6	0	6	2	10	0	18	0	0	0	0	14	0	0	0	48	8	13	56	80
Hourly Total	1	1	0	25	104	27	0	29	5	54	0	88	0	0	0	0	60	0	1	0	207	23	57	231	346
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	2	1	14	52	17	0	11	10	17	46	38	0	0	0	0	25	0	0	0	74	8	25	82	137
4:15 PM	0	0	0	8	31	8	0	20	3	26	52	49	0	0	0	0	23	0	0	0	51	15	28	66	123
4:30 PM	0	0	0	16	32	16	0	18	5	27	52	50	0	0	0	0	40	0	0	0	71	7	20	78	144
4:45 PM	0	0	1	14	37	15	0	10	7	14	50	31	0	0	3	0	20	3	0	0	66	9	31	75	124
Hourly Total	0	2	2	52	152	56	0	59	25	84	200	168	0	0	3	0	108	3	0	0	262	39	104	301	528
5:00 PM	0	1	0	11	43	12	0	5	4	26	92	35	0	0	1	0	21	1	1	0	80	11	48	92	140
5:15 PM	0	0	0	19	33	19	0	17	4	27	86	48	0	0	1	0	35	1	0	0	86	11	32	97	165
5:30 PM	0	0	0	16	32	16	0	15	5	19	64	39	0	0	0	1	27	1	0	0	78	12	33	90	146
5:45 PM	0	0	0	15	45	15	0	10	3	28	69	41	0	0	1	0	25	1	0	0	73	11	28	84	141
Hourly Total	0	1	0	61	153	62	0	47	16	100	311	163	0	0	3	1	108	4	1	0	317	45	141	363	592
Grand Total	1	4	2	161	458	168	0	149	52	262	539	463	0	0	6	1	313	7	2	0	903	134	317	1039	1677
Approach %	0.6	2.4	1.2	95.8	-	-	0.0	32.2	11.2	56.6	-	-	0.0	0.0	85.7	14.3	-	-	0.2	0.0	86.9	12.9	-	-	-
Total %	0.1	0.2	0.1	9.6	-	10.0	0.0	8.9	3.1	15.6	-	27.6	0.0	0.0	0.4	0.1	-	0.4	0.1	0.0	53.8	8.0	-	62.0	-
Lights	0	4	0	153	-	157	0	146	49	249	-	444	0	0	0	0	-	0	2	0	849	125	-	976	1577
% Lights	0.0	100.0	0.0	95.0	-	93.5	-	98.0	94.2	95.0	-	95.9	-	-	0.0	0.0	-	0.0	100.0	-	94.0	93.3	-	93.9	94.0
Buses	0	0	0	0	-	0	0	0	0	1	-	1	0	0	0	0	-	0	0	0	2	0	-	2	3
% Buses	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.4	-	0.2	-	-	0.0	0.0	-	0.0	0.0	-	0.2	0.0	-	0.2	0.2
Single-Unit Trucks	1	0	0	1	-	2	0	1	1	7	-	9	0	0	0	0	-	0	0	0	14	1	-	15	26
% Single-Unit Trucks	100.0	0.0	0.0	0.6	-	1.2	-	0.7	1.9	2.7	-	1.9	-	-	0.0	0.0	-	0.0	0.0	-	1.6	0.7	-	1.4	1.6
Articulated Trucks	0	0	0	2	-	2	0	0	0	1	-	1	0	0	0	0	-	0	0	0	3	0	-	3	6
% Articulated Trucks	0.0	0.0	0.0	1.2	-	1.2	-	0.0	0.0	0.4	-	0.2	-	-	0.0	0.0	-	0.0	0.0	-	0.3	0.0	-	0.3	0.4
Bicycles on Road	0	0	2	5	-	7	0	2	2	4	-	8	0	0	6	1	-	7	0	0	35	8	-	43	65

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Count Name: Clark St with Sherman Ave
Site Code:
Start Date: 10/14/2021

Turning Movement Peak Hour Data (8:00 AM)

Start Time	Clark St Eastbound						Clark St Westbound						Sherman Ave Northbound						Sherman Ave Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
8:00 AM	0	0	0	5	21	5	0	6	2	7	0	15	0	0	0	0	18	0	0	0	50	2	17	52	72
8:15 AM	1	0	0	5	22	6	0	4	0	16	0	20	0	0	0	0	12	0	0	0	49	8	15	57	83
8:30 AM	0	0	0	10	33	10	0	13	1	21	0	35	0	0	0	0	16	0	1	0	60	5	12	66	111
8:45 AM	0	1	0	5	28	6	0	6	2	10	0	18	0	0	0	0	14	0	0	0	48	8	13	56	80
Total	1	1	0	25	104	27	0	29	5	54	0	88	0	0	0	0	60	0	1	0	207	23	57	231	346
Approach %	3.7	3.7	0.0	92.6	-	-	0.0	33.0	5.7	61.4	-	-	0.0	0.0	0.0	0.0	-	-	0.4	0.0	89.6	10.0	-	-	-
Total %	0.3	0.3	0.0	7.2	-	7.8	0.0	8.4	1.4	15.6	-	25.4	0.0	0.0	0.0	0.0	-	0.0	0.3	0.0	59.8	6.6	-	66.8	-
PHF	0.250	0.250	0.000	0.625	-	0.675	0.000	0.558	0.625	0.643	-	0.629	0.000	0.000	0.000	0.000	-	0.000	0.250	0.000	0.863	0.719	-	0.875	0.779
Lights	0	1	0	24	-	25	0	29	5	50	-	84	0	0	0	0	-	0	1	0	196	22	-	219	328
% Lights	0.0	100.0	-	96.0	-	92.6	-	100.0	100.0	92.6	-	95.5	-	-	-	-	-	-	100.0	-	94.7	95.7	-	94.8	94.8
Buses	0	0	0	0	-	0	0	0	0	1	-	1	0	0	0	0	-	0	0	0	2	0	-	2	3
% Buses	0.0	0.0	-	0.0	-	0.0	-	0.0	0.0	1.9	-	1.1	-	-	-	-	-	-	0.0	-	1.0	0.0	-	0.9	0.9
Single-Unit Trucks	1	0	0	1	-	2	0	0	0	3	-	3	0	0	0	0	-	0	0	0	7	1	-	8	13
% Single-Unit Trucks	100.0	0.0	-	4.0	-	7.4	-	0.0	0.0	5.6	-	3.4	-	-	-	-	-	-	0.0	-	3.4	4.3	-	3.5	3.8
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	2	0	-	2	2
% Articulated Trucks	0.0	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	-	-	-	-	0.0	-	1.0	0.0	-	0.9	0.6
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	-	-	-	-	0.0	-	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	104	-	-	-	-	-	0	-	-	-	-	-	60	-	-	-	-	-	57	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Count Name: Clark St with Sherman Ave
Site Code:
Start Date: 10/14/2021

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Clark St Eastbound						Clark St Westbound						Sherman Ave Northbound						Sherman Ave Southbound						Int. Total
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:45 PM	0	0	1	14	37	15	0	10	7	14	50	31	0	0	3	0	20	3	0	0	66	9	31	75	124
5:00 PM	0	1	0	11	43	12	0	5	4	26	92	35	0	0	1	0	21	1	1	0	80	11	48	92	140
5:15 PM	0	0	0	19	33	19	0	17	4	27	86	48	0	0	1	0	35	1	0	0	86	11	32	97	165
5:30 PM	0	0	0	16	32	16	0	15	5	19	64	39	0	0	0	1	27	1	0	0	78	12	33	90	146
Total	0	1	1	60	145	62	0	47	20	86	292	153	0	0	5	1	103	6	1	0	310	43	144	354	575
Approach %	0.0	1.6	1.6	96.8	-	-	0.0	30.7	13.1	56.2	-	-	0.0	0.0	83.3	16.7	-	-	0.3	0.0	87.6	12.1	-	-	-
Total %	0.0	0.2	0.2	10.4	-	10.8	0.0	8.2	3.5	15.0	-	26.6	0.0	0.0	0.9	0.2	-	1.0	0.2	0.0	53.9	7.5	-	61.6	-
PHF	0.000	0.250	0.250	0.789	-	0.816	0.000	0.691	0.714	0.796	-	0.797	0.000	0.000	0.417	0.250	-	0.500	0.250	0.000	0.901	0.896	-	0.912	0.871
Lights	0	1	0	57	-	58	0	45	17	83	-	145	0	0	0	0	-	0	1	0	288	42	-	331	534
% Lights	-	100.0	0.0	95.0	-	93.5	-	95.7	85.0	96.5	-	94.8	-	-	0.0	0.0	-	0.0	100.0	-	92.9	97.7	-	93.5	92.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	0.0	-	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	2
% Single-Unit Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	5.0	0.0	-	0.7	-	-	0.0	0.0	-	0.0	0.0	-	0.3	0.0	-	0.3	0.3
Articulated Trucks	0	0	0	2	-	2	0	0	0	1	-	1	0	0	0	0	-	0	0	0	0	0	-	0	3
% Articulated Trucks	-	0.0	0.0	3.3	-	3.2	-	0.0	0.0	1.2	-	0.7	-	-	0.0	0.0	-	0.0	0.0	-	0.0	0.0	-	0.0	0.5
Bicycles on Road	0	0	1	1	-	2	0	2	2	2	-	6	0	0	5	1	-	6	0	0	21	1	-	22	36
% Bicycles on Road	-	0.0	100.0	1.7	-	3.2	-	4.3	10.0	2.3	-	3.9	-	-	100.0	100.0	-	100.0	0.0	-	6.8	2.3	-	6.2	6.3
Pedestrians	-	-	-	-	145	-	-	-	-	-	292	-	-	-	-	-	103	-	-	-	-	-	144	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Count Name: Orington Ave with Church St
Site Code:
Start Date: 10/14/2021
Page No: 1

Turning Movement Data

Start Time	Church St Eastbound					Church St Westbound						Orington Ave Northbound						Orington Ave Southbound						Int. Total
	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	5	17	0	22	0	0	0	0	6	0	0	0	7	1	7	8	0	0	0	0	7	0	30
7:15 AM	0	5	41	0	46	0	0	1	0	2	1	0	0	5	1	6	6	0	0	0	0	6	0	53
7:30 AM	0	10	46	1	57	0	0	0	0	3	0	0	0	11	3	9	14	0	0	0	0	5	0	71
7:45 AM	0	11	68	0	79	0	0	0	0	7	0	0	0	13	12	10	25	0	0	0	0	12	0	104
Hourly Total	0	31	172	1	204	0	0	1	0	18	1	0	0	36	17	32	53	0	0	0	0	30	0	258
8:00 AM	0	11	76	0	87	0	0	0	0	13	0	0	0	14	8	17	22	0	0	0	0	11	0	109
8:15 AM	0	14	89	0	103	0	0	0	0	6	0	0	0	16	12	22	28	0	0	0	0	11	0	131
8:30 AM	0	20	96	0	116	0	0	0	0	9	0	0	0	33	13	27	46	0	0	0	0	9	0	162
8:45 AM	0	19	79	0	98	0	0	0	0	14	0	0	0	12	17	34	29	0	0	0	0	10	0	127
Hourly Total	0	64	340	0	404	0	0	0	0	42	0	0	0	75	50	100	125	0	0	0	0	41	0	529
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	25	85	0	110	0	0	0	0	16	0	0	0	15	21	54	36	0	0	0	0	38	0	146
4:15 PM	0	17	93	0	110	0	0	0	0	12	0	0	0	41	22	44	63	0	0	0	0	41	0	173
4:30 PM	0	18	86	0	104	0	0	0	0	18	0	0	0	38	23	42	61	0	0	0	0	35	0	165
4:45 PM	0	21	109	0	130	0	0	0	0	28	0	0	0	28	27	57	55	0	0	0	0	46	0	185
Hourly Total	0	81	373	0	454	0	0	0	0	74	0	0	0	122	93	197	215	0	0	0	0	160	0	669
5:00 PM	0	20	87	0	107	0	0	0	0	31	0	0	0	30	27	56	57	0	0	0	0	57	0	164
5:15 PM	0	23	97	0	120	0	0	0	0	20	0	0	0	42	16	62	58	0	0	0	0	42	0	178
5:30 PM	0	11	89	0	100	0	0	0	0	25	0	0	0	30	29	64	59	0	0	0	0	41	0	159
5:45 PM	0	20	101	1	122	0	0	0	0	17	0	0	0	26	14	46	40	0	0	0	0	45	0	162
Hourly Total	0	74	374	1	449	0	0	0	0	93	0	0	0	128	86	228	214	0	0	0	0	185	0	663
Grand Total	0	250	1259	2	1511	0	0	1	0	227	1	0	0	361	246	557	607	0	0	0	0	416	0	2119
Approach %	0.0	16.5	83.3	0.1	-	0.0	0.0	100.0	0.0	-	-	0.0	0.0	59.5	40.5	-	-	0.0	0.0	0.0	0.0	-	-	-
Total %	0.0	11.8	59.4	0.1	71.3	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	17.0	11.6	-	28.6	0.0	0.0	0.0	0.0	-	0.0	-
Lights	0	239	1119	0	1358	0	0	0	0	-	0	0	0	352	225	-	577	0	0	0	0	-	0	1935
% Lights	-	95.6	88.9	0.0	89.9	-	-	0.0	-	-	0.0	-	-	97.5	91.5	-	95.1	-	-	-	-	-	-	91.3
Buses	0	1	33	0	34	0	0	0	0	-	0	0	0	1	2	-	3	0	0	0	0	-	0	37
% Buses	-	0.4	2.6	0.0	2.3	-	-	0.0	-	-	0.0	-	-	0.3	0.8	-	0.5	-	-	-	-	-	-	1.7
Single-Unit Trucks	0	5	8	1	14	0	0	0	0	-	0	0	0	3	4	-	7	0	0	0	0	-	0	21
% Single-Unit Trucks	-	2.0	0.6	50.0	0.9	-	-	0.0	-	-	0.0	-	-	0.8	1.6	-	1.2	-	-	-	-	-	-	1.0
Articulated Trucks	0	0	4	0	4	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	4
% Articulated Trucks	-	0.0	0.3	0.0	0.3	-	-	0.0	-	-	0.0	-	-	0.0	0.0	-	0.0	-	-	-	-	-	-	0.2
Bicycles on Road	0	5	95	1	101	0	0	1	0	-	1	0	0	5	15	-	20	0	0	0	0	-	0	122
% Bicycles on Road	-	2.0	7.5	50.0	6.7	-	-	100.0	-	-	100.0	-	-	1.4	6.1	-	3.3	-	-	-	-	-	-	5.8
Pedestrians	-	-	-	-	-	-	-	-	-	227	-	-	-	-	-	557	-	-	-	-	-	416	-	-

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Count Name: Orington Ave with Church St
Site Code:
Start Date: 10/14/2021

Turning Movement Peak Hour Data (8:00 AM)

Start Time	Church St Eastbound					Church St Westbound						Orington Ave Northbound						Orington Ave Southbound						Int. Total
	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
8:00 AM	0	11	76	0	87	0	0	0	0	13	0	0	0	14	8	17	22	0	0	0	0	11	0	109
8:15 AM	0	14	89	0	103	0	0	0	0	6	0	0	0	16	12	22	28	0	0	0	0	11	0	131
8:30 AM	0	20	96	0	116	0	0	0	0	9	0	0	0	33	13	27	46	0	0	0	0	9	0	162
8:45 AM	0	19	79	0	98	0	0	0	0	14	0	0	0	12	17	34	29	0	0	0	0	10	0	127
Total	0	64	340	0	404	0	0	0	0	42	0	0	0	75	50	100	125	0	0	0	0	41	0	529
Approach %	0.0	15.8	84.2	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	60.0	40.0	-	-	0.0	0.0	0.0	0.0	-	-	-
Total %	0.0	12.1	64.3	0.0	76.4	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	14.2	9.5	-	23.6	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.800	0.885	0.000	0.871	0.000	0.000	0.000	0.000	-	0.000	0.000	0.000	0.568	0.735	-	0.679	0.000	0.000	0.000	0.000	-	0.000	0.816
Lights	0	62	293	0	355	0	0	0	0	-	0	0	0	72	43	-	115	0	0	0	0	-	0	470
% Lights	-	96.9	86.2	-	87.9	-	-	-	-	-	-	-	-	96.0	86.0	-	92.0	-	-	-	-	-	-	88.8
Buses	0	1	7	0	8	0	0	0	0	-	0	0	0	1	1	-	2	0	0	0	0	-	0	10
% Buses	-	1.6	2.1	-	2.0	-	-	-	-	-	-	-	-	1.3	2.0	-	1.6	-	-	-	-	-	-	1.9
Single-Unit Trucks	0	0	4	0	4	0	0	0	0	-	0	0	0	1	0	-	1	0	0	0	0	-	0	5
% Single-Unit Trucks	-	0.0	1.2	-	1.0	-	-	-	-	-	-	-	-	1.3	0.0	-	0.8	-	-	-	-	-	-	0.9
Articulated Trucks	0	0	3	0	3	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	3
% Articulated Trucks	-	0.0	0.9	-	0.7	-	-	-	-	-	-	-	-	0.0	0.0	-	0.0	-	-	-	-	-	-	0.6
Bicycles on Road	0	1	33	0	34	0	0	0	0	-	0	0	0	1	6	-	7	0	0	0	0	-	0	41
% Bicycles on Road	-	1.6	9.7	-	8.4	-	-	-	-	-	-	-	-	1.3	12.0	-	5.6	-	-	-	-	-	-	7.8
Pedestrians	-	-	-	-	-	-	-	-	-	42	-	-	-	-	-	100	-	-	-	-	-	41	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Count Name: Orington Ave with Church St
Site Code:
Start Date: 10/14/2021

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Church St Eastbound					Church St Westbound						Orington Ave Northbound						Orington Ave Southbound						Int. Total
	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	
4:45 PM	0	21	109	0	130	0	0	0	0	28	0	0	0	28	27	57	55	0	0	0	0	46	0	185
5:00 PM	0	20	87	0	107	0	0	0	0	31	0	0	0	30	27	56	57	0	0	0	0	57	0	164
5:15 PM	0	23	97	0	120	0	0	0	0	20	0	0	0	42	16	62	58	0	0	0	0	42	0	178
5:30 PM	0	11	89	0	100	0	0	0	0	25	0	0	0	30	29	64	59	0	0	0	0	41	0	159
Total	0	75	382	0	457	0	0	0	0	104	0	0	0	130	99	239	229	0	0	0	0	186	0	686
Approach %	0.0	16.4	83.6	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	56.8	43.2	-	-	0.0	0.0	0.0	0.0	-	-	-
Total %	0.0	10.9	55.7	0.0	66.6	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	19.0	14.4	-	33.4	0.0	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.815	0.876	0.000	0.879	0.000	0.000	0.000	0.000	-	0.000	0.000	0.000	0.774	0.853	-	0.970	0.000	0.000	0.000	0.000	-	0.000	0.927
Lights	0	74	344	0	418	0	0	0	0	-	0	0	0	127	91	-	218	0	0	0	0	-	0	636
% Lights	-	98.7	90.1	-	91.5	-	-	-	-	-	-	-	-	97.7	91.9	-	95.2	-	-	-	-	-	-	92.7
Buses	0	0	5	0	5	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	5
% Buses	-	0.0	1.3	-	1.1	-	-	-	-	-	-	-	-	0.0	0.0	-	0.0	-	-	-	-	-	-	0.7
Single-Unit Trucks	0	0	2	0	2	0	0	0	0	-	0	0	0	2	2	-	4	0	0	0	0	-	0	6
% Single-Unit Trucks	-	0.0	0.5	-	0.4	-	-	-	-	-	-	-	-	1.5	2.0	-	1.7	-	-	-	-	-	-	0.9
Articulated Trucks	0	0	0	0	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	-	0.0	0.0	-	0.0	-	-	-	-	-	-	-	-	0.0	0.0	-	0.0	-	-	-	-	-	-	0.0
Bicycles on Road	0	1	31	0	32	0	0	0	0	-	0	0	0	1	6	-	7	0	0	0	0	-	0	39
% Bicycles on Road	-	1.3	8.1	-	7.0	-	-	-	-	-	-	-	-	0.8	6.1	-	3.1	-	-	-	-	-	-	5.7
Pedestrians	-	-	-	-	-	-	-	-	-	104	-	-	-	-	-	239	-	-	-	-	-	186	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Count Name: Orington Ave with Elgin Rd
Site Code:
Start Date: 10/14/2021
Page No: 1

Turning Movement Data

Start Time	Elgin Rd Eastbound					Elgin Rd Westbound					Orington Ave Northbound					
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
7:00 AM	0	8	0	1	8	0	0	36	2	36	0	1	3	0	4	48
7:15 AM	0	23	0	1	23	0	0	41	1	41	0	0	3	1	3	67
7:30 AM	0	29	0	0	29	0	0	61	4	61	0	1	7	4	8	98
7:45 AM	1	38	0	5	39	0	0	80	3	80	0	0	6	3	6	125
Hourly Total	1	98	0	7	99	0	0	218	10	218	0	2	19	8	21	338
8:00 AM	0	33	0	5	33	0	1	61	15	62	0	0	5	2	5	100
8:15 AM	0	46	0	6	46	0	0	76	8	76	0	0	12	2	12	134
8:30 AM	0	56	0	15	56	0	0	80	2	80	0	0	14	0	14	150
8:45 AM	0	42	0	12	42	0	0	77	14	77	0	1	13	4	14	133
Hourly Total	0	177	0	38	177	0	1	294	39	295	0	1	44	8	45	517
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	46	0	15	46	0	0	80	14	80	0	0	6	14	6	132
4:15 PM	0	37	0	22	37	0	0	74	12	74	0	0	7	28	7	118
4:30 PM	0	42	0	26	42	0	0	94	4	94	0	0	7	11	7	143
4:45 PM	0	47	0	21	47	0	2	84	19	86	0	0	14	12	14	147
Hourly Total	0	172	0	84	172	0	2	332	49	334	0	0	34	65	34	540
5:00 PM	0	33	0	35	33	0	0	107	21	107	0	1	6	18	7	147
5:15 PM	0	37	0	19	37	0	0	98	26	98	0	0	14	21	14	149
5:30 PM	0	49	0	23	49	0	1	106	16	107	0	0	13	7	13	169
5:45 PM	0	46	0	33	46	0	0	87	13	87	0	1	6	9	7	140
Hourly Total	0	165	0	110	165	0	1	398	76	399	0	2	39	55	41	605
Grand Total	1	612	0	239	613	0	4	1242	174	1246	0	5	136	136	141	2000
Approach %	0.2	99.8	0.0	-	-	0.0	0.3	99.7	-	-	0.0	3.5	96.5	-	-	-
Total %	0.1	30.6	0.0	-	30.7	0.0	0.2	62.1	-	62.3	0.0	0.3	6.8	-	7.1	-
Lights	1	576	0	-	577	0	2	1193	-	1195	0	5	122	-	127	1899
% Lights	100.0	94.1	-	-	94.1	-	50.0	96.1	-	95.9	-	100.0	89.7	-	90.1	95.0
Buses	0	4	0	-	4	0	0	2	-	2	0	0	0	-	0	6
% Buses	0.0	0.7	-	-	0.7	-	0.0	0.2	-	0.2	-	0.0	0.0	-	0.0	0.3
Single-Unit Trucks	0	16	0	-	16	0	0	19	-	19	0	0	1	-	1	36
% Single-Unit Trucks	0.0	2.6	-	-	2.6	-	0.0	1.5	-	1.5	-	0.0	0.7	-	0.7	1.8
Articulated Trucks	0	6	0	-	6	0	0	5	-	5	0	0	0	-	0	11
% Articulated Trucks	0.0	1.0	-	-	1.0	-	0.0	0.4	-	0.4	-	0.0	0.0	-	0.0	0.6
Bicycles on Road	0	10	0	-	10	0	2	23	-	25	0	0	13	-	13	48
% Bicycles on Road	0.0	1.6	-	-	1.6	-	50.0	1.9	-	2.0	-	0.0	9.6	-	9.2	2.4
Pedestrians	-	-	-	239	-	-	-	-	174	-	-	-	-	136	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

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Rosemont, Illinois, United States 60018
(847)518-9990 epurguette@kloainc.com

Count Name: Orington Ave with Elgin Rd
Site Code:
Start Date: 10/14/2021

Turning Movement Peak Hour Data (8:00 AM)

Start Time	Elgin Rd Eastbound					Elgin Rd Westbound					Orington Ave Northbound					
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
8:00 AM	0	33	0	5	33	0	1	61	15	62	0	0	5	2	5	100
8:15 AM	0	46	0	6	46	0	0	76	8	76	0	0	12	2	12	134
8:30 AM	0	56	0	15	56	0	0	80	2	80	0	0	14	0	14	150
8:45 AM	0	42	0	12	42	0	0	77	14	77	0	1	13	4	14	133
Total	0	177	0	38	177	0	1	294	39	295	0	1	44	8	45	517
Approach %	0.0	100.0	0.0	-	-	0.0	0.3	99.7	-	-	0.0	2.2	97.8	-	-	-
Total %	0.0	34.2	0.0	-	34.2	0.0	0.2	56.9	-	57.1	0.0	0.2	8.5	-	8.7	-
PHF	0.000	0.790	0.000	-	0.790	0.000	0.250	0.919	-	0.922	0.000	0.250	0.786	-	0.804	0.862
Lights	0	169	0	-	169	0	1	276	-	277	0	1	38	-	39	485
% Lights	-	95.5	-	-	95.5	-	100.0	93.9	-	93.9	-	100.0	86.4	-	86.7	93.8
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	-	0.0	-	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	5	0	-	5	0	0	12	-	12	0	0	1	-	1	18
% Single-Unit Trucks	-	2.8	-	-	2.8	-	0.0	4.1	-	4.1	-	0.0	2.3	-	2.2	3.5
Articulated Trucks	0	1	0	-	1	0	0	2	-	2	0	0	0	-	0	3
% Articulated Trucks	-	0.6	-	-	0.6	-	0.0	0.7	-	0.7	-	0.0	0.0	-	0.0	0.6
Bicycles on Road	0	2	0	-	2	0	0	4	-	4	0	0	5	-	5	11
% Bicycles on Road	-	1.1	-	-	1.1	-	0.0	1.4	-	1.4	-	0.0	11.4	-	11.1	2.1
Pedestrians	-	-	-	38	-	-	-	-	39	-	-	-	-	8	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 epurguette@kloainc.com

Count Name: Orington Ave with Elgin Rd
Site Code:
Start Date: 10/14/2021

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Elgin Rd Eastbound					Elgin Rd Westbound					Orington Ave Northbound					
	U-Turn	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Left	Right	Peds	App. Total	Int. Total
4:45 PM	0	47	0	21	47	0	2	84	19	86	0	0	14	12	14	147
5:00 PM	0	33	0	35	33	0	0	107	21	107	0	1	6	18	7	147
5:15 PM	0	37	0	19	37	0	0	98	26	98	0	0	14	21	14	149
5:30 PM	0	49	0	23	49	0	1	106	16	107	0	0	13	7	13	169
Total	0	166	0	98	166	0	3	395	82	398	0	1	47	58	48	612
Approach %	0.0	100.0	0.0	-	-	0.0	0.8	99.2	-	-	0.0	2.1	97.9	-	-	-
Total %	0.0	27.1	0.0	-	27.1	0.0	0.5	64.5	-	65.0	0.0	0.2	7.7	-	7.8	-
PHF	0.000	0.847	0.000	-	0.847	0.000	0.375	0.923	-	0.930	0.000	0.250	0.839	-	0.857	0.905
Lights	0	157	0	-	157	0	1	387	-	388	0	1	44	-	45	590
% Lights	-	94.6	-	-	94.6	-	33.3	98.0	-	97.5	-	100.0	93.6	-	93.8	96.4
Buses	0	0	0	-	0	0	0	1	-	1	0	0	0	-	0	1
% Buses	-	0.0	-	-	0.0	-	0.0	0.3	-	0.3	-	0.0	0.0	-	0.0	0.2
Single-Unit Trucks	0	1	0	-	1	0	0	2	-	2	0	0	0	-	0	3
% Single-Unit Trucks	-	0.6	-	-	0.6	-	0.0	0.5	-	0.5	-	0.0	0.0	-	0.0	0.5
Articulated Trucks	0	2	0	-	2	0	0	0	-	0	0	0	0	-	0	2
% Articulated Trucks	-	1.2	-	-	1.2	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.3
Bicycles on Road	0	6	0	-	6	0	2	5	-	7	0	0	3	-	3	16
% Bicycles on Road	-	3.6	-	-	3.6	-	66.7	1.3	-	1.8	-	0.0	6.4	-	6.3	2.6
Pedestrians	-	-	-	98	-	-	-	-	82	-	-	-	-	58	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Study Name	Orington Ave with Clark St
Start Date	Thursday, October 14, 2021 7:00 AM
End Date	Thursday, October 14, 2021 6:00 PM
Site Code	

Report Summary

		Eastbound						Northbound						Southbound						Southwestbound								Crosswalk	
Time Period	**Class.**	**U**	**L**	**BL**	**R**	**I**	**O**	**U**	**L**	**T**	**BR**	**I**	**O**	**U**	**HL**	**T**	**R**	**I**	**O**	**U**	**BL**	**BR**	**HR**	**I**	**O**	**Total**		**:destria**	**Total**
Peak 1	Lights	0	0	0	0	0	5	0	5	80	37	122	0	0	0	0	0	0	81	0	0	0	1	1	37	123	W	33	33
Specified Period	%	0%	0%	0%	0%	0%	83%	0%	100%	96%	93%	95%	0%	0%	0%	0%	0%	0%	95%	0%	0%	0%	100%	100%	88%	92%		100%	
8:00 AM - 9:00 AM	Buses	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	S	5	5
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%		100%	
8:00 AM - 9:00 AM	ngle-Unit Truc	0	1	1	0	2	0	0	0	2	0	2	0	0	0	0	0	0	3	0	0	0	0	0	1	4	N	55	55
	%	0%	100%	100%	0%	100%	0%	0%	0%	2%	0%	2%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	2%	3%		100%	
	ticulated Truc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NE	0	0
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
	icycles on Roa	0	0	0	0	0	1	0	0	0	3	3	0	0	1	0	1	2	0	0	0	0	0	0	4	5		**93**	**93**
	%	0%	0%	0%	0%	0%	17%	0%	0%	0%	8%	2%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	0%	0%	10%	4%			
	Total	**0**	**1**	**1**	**0**	**2**	**6**	**0**	**5**	**83**	**40**	**128**	**0**	**0**	**1**	**0**	**1**	**2**	**85**	**0**	**0**	**0**	**1**	**1**	**42**	**133**			
	PHF	0	0.25	0.25	0	0.5	0.5	0	0.42	0.77	0.71	0.76	0	0	0.25	0	0.25	0.5	0.76	0	0	0	0.25	0.25	0.7	0.76			
	Approach %					2%	5%					96%	0%					2%	64%					1%	32%				
Peak 2	Lights	0	0	2	0	2	1	0	1	151	41	193	0	0	0	0	0	0	151	0	0	0	0	0	43	195	W	66	66
Specified Period	%	0%	0%	100%	0%	100%	50%	0%	50%	97%	93%	96%	0%	0%	0%	0%	0%	0%	94%	0%	0%	0%	0%	0%	93%	94%		100%	
4:45 PM - 5:45 PM	Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	10	10
One Hour Peak	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		100%	
4:45 PM - 5:45 PM	ngle-Unit Truc	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	2	N	154	154
	%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%		100%	
	ticulated Truc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	NE	0	0
	%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	
	icycles on Roa	0	0	0	0	0	1	0	1	2	3	6	0	0	0	0	0	0	7	0	0	0	5	5	3	11		**230**	**230**
	%	0%	0%	0%	0%	0%	50%	0%	50%	1%	7%	3%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	100%	100%	7%	5%			
	Total	**0**	**0**	**2**	**0**	**2**	**2**	**0**	**2**	**155**	**44**	**201**	**0**	**0**	**0**	**0**	**0**	**0**	**160**	**0**	**0**	**0**	**5**	**5**	**46**	**208**			
	PHF	0	0	0.5	0	0.5	0.5	0	0.5	0.84	0.79	0.91	0	0	0	0	0	0	0.85	0	0	0	0.42	0.42	0.82	0.91			
	Approach %					1%	1%					97%	0%					0%	77%					2%	22%				

Preliminary Site Plan

Doc ID: 4bc6817e040cb90da216040abbb5a3ba3a401faa

ITE Trip Generation Worksheets

Research and Development Center
(760)

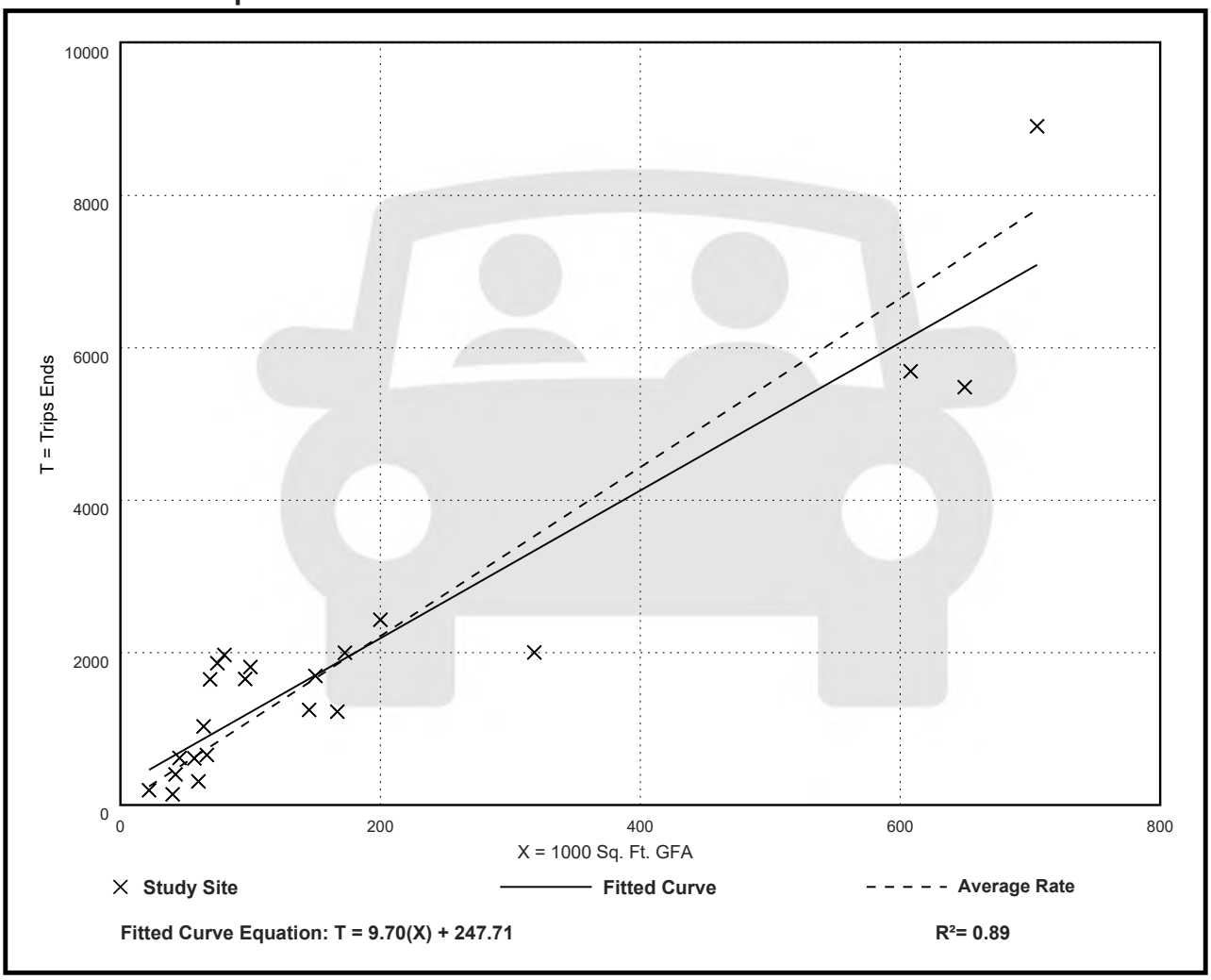
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 22
Avg. 1000 Sq. Ft. GFA: 179
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.08	3.48 - 24.95	4.45

Data Plot and Equation



Fitted Curve Equation: T = 9.70(X) + 247.71

R^2= 0.89

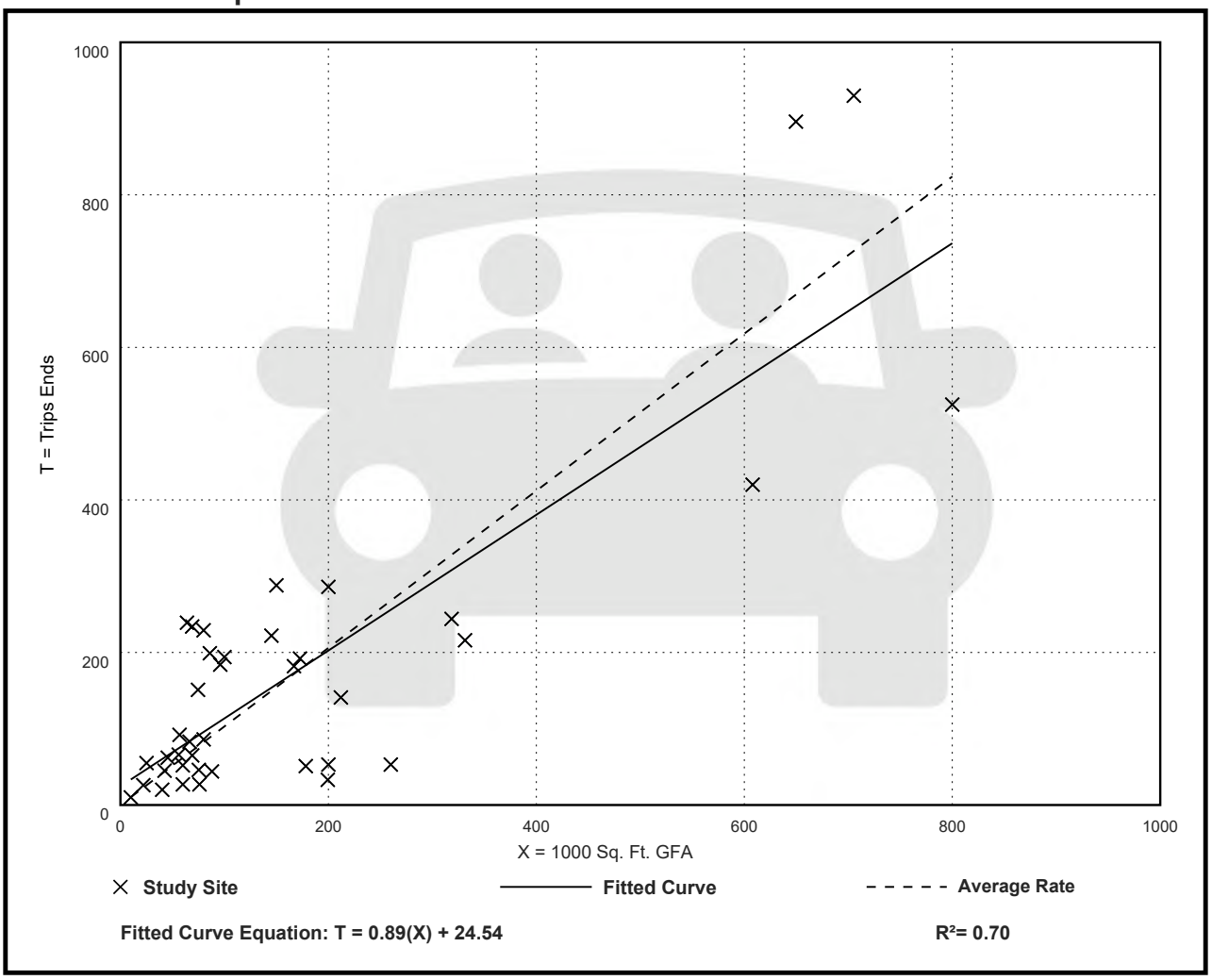
Research and Development Center
(760)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 39
Avg. 1000 Sq. Ft. GFA: 173
Directional Distribution: 82% entering, 18% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.03	0.17 - 3.73	0.65

Data Plot and Equation



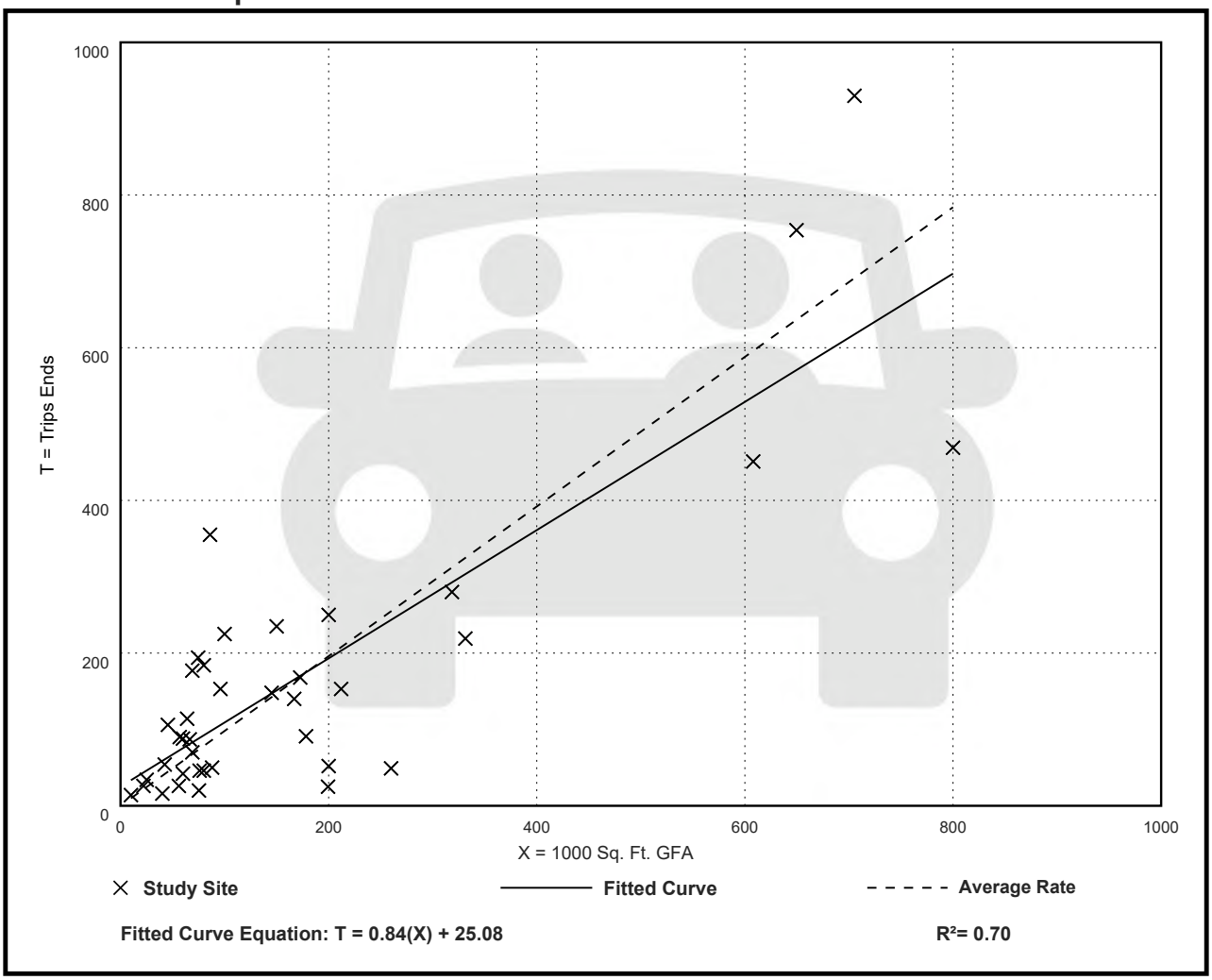
Research and Development Center
(760)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 39
Avg. 1000 Sq. Ft. GFA: 173
Directional Distribution: 16% entering, 84% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.98	0.13 - 4.13	0.64

Data Plot and Equation



CMAP 2050 Projections Letter

Doc ID: 4bc6817e040cb90da216040abbb5a3ba3a401faa

Chicago Metropolitan Agency for Planning

433 West Van Buren Street
Suite 450
Chicago, IL 60607

312-454-0400
cmap.illinois.gov

October 29, 2021

Elise Purguette
Traffic Engineer
Kenig, Lindgren, O'Hara and Aboona, Inc.
9575 West Higgins Road
Suite 400
Rosemont, IL 60018

Subject: ***Chicago Avenue - Church Street - Sherman Avenue***
IDOT

Dear Ms. Purguette:

In response to a request made on your behalf and dated October 29, 2021, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current ADT	Year 2050 ADT
Sherman Ave	3,300	3,700
Church St	7,950	8,900
Chicago Ave north of Church St	7,200	7,700
Chicago Ave south of Church St	11,600	12,400

Traffic projections are developed using existing ADT data provided in the request letter and the results from the June 2021 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

If you have any questions, please call me at (312) 386-8806.

Sincerely,

Jose Rodriguez, PTP, AICP
Senior Planner, Research & Analysis

cc: Rios (IDOT)
\2021_CY_TrafficForecast\Evanston\ck-136-21\ck-136-21.docx

Level of Service Criteria

LEVEL OF SERVICE CRITERIA

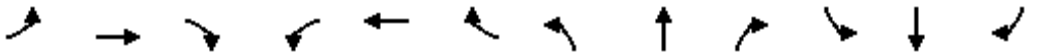
Signalized Intersections		
Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Good progression, with more vehicles stopping than for Level of Service A.	>10 - 20
C	Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 - 35
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	>35 - 55
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	>55 - 80
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80.0

Unsignalized Intersections	
Level of Service	Average Total Delay (SEC/VEH)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Source: *Highway Capacity Manual*, 2010.

Capacity Analysis Summary Sheets

Year 2021 Weekday Morning Peak Hour Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	25	51	9	95	0	0	0	0	208	23
Future Volume (vph)	0	0	25	51	9	95	0	0	0	0	208	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		45
Storage Lanes	0		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.92	0.87							0.69
Frt			0.865		0.863							0.850
Flt Protected				0.950								
Satd. Flow (prot)	0	0	1375	1745	1163	0	0	0	0	0	1749	1351
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	1375	1604	1163	0	0	0	0	0	1749	937
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)			469	65	122							85
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		472			501			349			309	
Travel Time (s)		10.7			11.4			7.9			7.0	
Confl. Peds. (#/hr)	57		60	60		57	104					104
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	0%	0%	7%	0%	0%	0%	0%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)			0		0							0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	32	65	134	0	0	0	0	0	267	29
Turn Type			Prot	pm+pt	NA						NA	Perm
Protected Phases			9	1 4!	6						4!	
Permitted Phases				6								4
Detector Phase			9	1 4	6						4	4
Switch Phase												
Minimum Initial (s)			4.0		4.0						4.0	4.0
Minimum Split (s)			9.0		25.0						25.0	25.0
Total Split (s)			30.0		25.0						35.0	35.0
Total Split (%)			33.3%		27.8%						38.9%	38.9%
Yellow Time (s)			4.0		4.0						4.0	4.0
All-Red Time (s)			1.0		1.0						1.0	1.0
Lost Time Adjust (s)			0.0		0.0						0.0	0.0
Total Lost Time (s)			5.0		5.0						5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode			Max		Max						Max	Max
Act Effct Green (s)			25.0	55.0	20.0						30.0	30.0
Actuated g/C Ratio			0.28	0.61	0.22						0.33	0.33

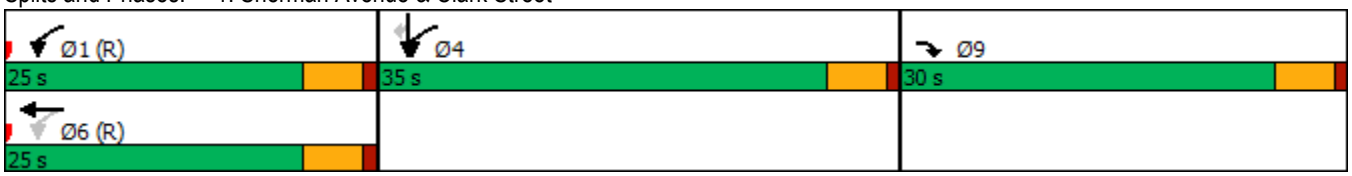
Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	9.0
Total Split (s)	25.0
Total Split (%)	28%
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio			0.04	0.06	0.38						0.46	0.08
Control Delay			0.1	2.1	10.5						26.8	0.4
Queue Delay			0.0	0.0	0.0						0.0	0.0
Total Delay			0.1	2.1	10.5						26.8	0.4
LOS			A	A	B						C	A
Approach Delay		0.1			7.8						24.2	
Approach LOS		A			A						C	
Queue Length 50th (ft)			0	0	5						118	0
Queue Length 95th (ft)			0	11	36						159	0
Internal Link Dist (ft)		392			421			269			229	
Turn Bay Length (ft)												45
Base Capacity (vph)			720	1091	353						583	369
Starvation Cap Reductn			0	0	0						0	0
Spillback Cap Reductn			0	0	0						0	0
Storage Cap Reductn			0	0	0						0	0
Reduced v/c Ratio			0.04	0.06	0.38						0.46	0.08

Intersection Summary

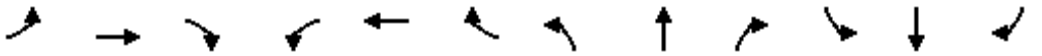
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 1:WBL and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.46
Intersection Signal Delay: 16.5 Intersection LOS: B
Intersection Capacity Utilization 38.3% ICU Level of Service A
Analysis Period (min) 15
! Phase conflict between lane groups.

Splits and Phases: 1: Sherman Avenue & Clark Street



Lane Group	Ø1
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

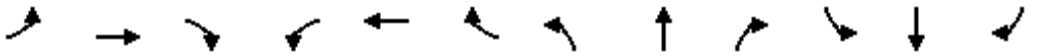


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	404	0	0	0	0	0	118	58	0	0	0
Future Volume (vph)	107	404	0	0	0	0	0	118	58	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	40		0	0		0	0		70	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98								0.95			
Frt									0.850			
Flt Protected	0.950											
Satd. Flow (prot)	1711	3188	0	0	0	0	0	3219	1531	0	0	0
Flt Permitted	0.950											
Satd. Flow (perm)	1673	3188	0	0	0	0	0	3219	1449	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	130								71			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		431			556			604			449	
Travel Time (s)		9.8			12.6			13.7			10.2	
Confl. Peds. (#/hr)	41		100	100		41	33		42	42		33
Confl. Bikes (#/hr)			34									
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	0%	0%	0%	0%	0%	3%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0			0			0	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	493	0	0	0	0	0	144	71	0	0	0
Turn Type	Perm	NA						NA	Perm			
Protected Phases		4						2				
Permitted Phases	4								2			
Detector Phase	4	4						2	2			
Switch Phase												
Minimum Initial (s)	4.0	4.0						4.0	4.0			
Minimum Split (s)	44.0	44.0						26.0	26.0			
Total Split (s)	44.0	44.0						26.0	26.0			
Total Split (%)	62.9%	62.9%						37.1%	37.1%			
Yellow Time (s)	4.0	4.0						4.0	4.0			
All-Red Time (s)	1.0	1.0						1.0	1.0			
Lost Time Adjust (s)	0.0	0.0						0.0	0.0			
Total Lost Time (s)	5.0	5.0						5.0	5.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max						Max	Max			
Act Effct Green (s)	39.0	39.0						21.0	21.0			
Actuated g/C Ratio	0.56	0.56						0.30	0.30			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.13	0.28						0.15	0.15			
Control Delay	1.9	8.6						18.5	6.1			
Queue Delay	0.0	0.0						0.0	0.0			
Total Delay	1.9	8.6						18.5	6.1			
LOS	A	A						B	A			
Approach Delay		7.2						14.4				
Approach LOS		A						B				
Queue Length 50th (ft)	0	53						23	0			
Queue Length 95th (ft)	16	70						40	21			
Internal Link Dist (ft)		351			476			524			369	
Turn Bay Length (ft)	40								70			
Base Capacity (vph)	989	1776						965	484			
Starvation Cap Reductn	0	0						0	0			
Spillback Cap Reductn	0	0						0	0			
Storage Cap Reductn	0	0						0	0			
Reduced v/c Ratio	0.13	0.28						0.15	0.15			

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Orrington Avenue & Church Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	264	142	0	0	0	0	361	33	10	176	0
Future Volume (vph)	56	264	142	0	0	0	0	361	33	10	176	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94									1.00	
Frt		0.954							0.850			
Flt Protected		0.994									0.997	
Satd. Flow (prot)	0	2888	0	0	0	0	0	1621	1516	0	1544	0
Flt Permitted		0.994									0.979	
Satd. Flow (perm)	0	2847	0	0	0	0	0	1621	1516	0	1516	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63							50			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		556			228			291			542	
Travel Time (s)		12.6			5.2			6.6			12.3	
Confl. Peds. (#/hr)	63		67	67		63	147		7	7		147
Confl. Bikes (#/hr)			3									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	4%	3%	0%	0%	0%	0%	2%	3%	20%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0						0			0	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	502	0	0	0	0	0	392	36	0	202	0
Turn Type	Perm	NA						NA	custom	Perm	NA	
Protected Phases		10						2 6	6		2 6	
Permitted Phases	10									2 6		
Detector Phase	10	10						2 6	6	2 6	2 6	
Switch Phase												
Minimum Initial (s)	30.0	30.0							24.0			
Minimum Split (s)	36.0	36.0							30.0			
Total Split (s)	36.0	36.0							30.0			
Total Split (%)	32.7%	32.7%							27.3%			
Yellow Time (s)	4.5	4.5							4.5			
All-Red Time (s)	1.5	1.5							1.5			
Lost Time Adjust (s)		0.0							0.0			
Total Lost Time (s)		6.0							6.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max							None			
Act Effct Green (s)		30.0						72.0	24.0		72.0	
Actuated g/C Ratio		0.27						0.65	0.22		0.65	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	42.0
Minimum Split (s)	44.0
Total Split (s)	44.0
Total Split (%)	40%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.61						0.37	0.10		0.20	
Control Delay		34.0						9.9	6.7		8.2	
Queue Delay		0.0						0.0	0.0		0.0	
Total Delay		34.0						9.9	6.7		8.2	
LOS		C						A	A		A	
Approach Delay		34.0						9.6			8.2	
Approach LOS		C						A			A	
Queue Length 50th (ft)		142						115	0		52	
Queue Length 95th (ft)		200						170	19		84	
Internal Link Dist (ft)		476			148			211			462	
Turn Bay Length (ft)									50			
Base Capacity (vph)		822						1061	369		992	
Starvation Cap Reductn		0						0	0		0	
Spillback Cap Reductn		0						0	0		0	
Storage Cap Reductn		0						0	0		0	
Reduced v/c Ratio		0.61						0.37	0.10		0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 20.2		Intersection LOS: C	
Intersection Capacity Utilization 93.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Chicago Avenue & Church Street

Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	0	0	0	0	0	290	0	71	175	0
Future Vol, veh/h	0	0	0	0	0	290	0	71	175	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	0	0	0	0	0	5	0	7	3	0
Mvmt Flow	0	0	0	0	0	337	0	83	203	0
Number of Lanes	0	0	0	0	0	1	0	1	1	0

Approach	WB	SE
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	WB
Conflicting Lanes Left	2	1
Conflicting Approach Right	SE	NB
Conflicting Lanes Right	1	2
HCM Control Delay	11.1	10.7
HCM LOS	B	B

Lane	NBLn1	NBLn2	WBLn1	SELn1
Vol Left, %	100%	0%	0%	100%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	0%	100%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	155	71	290	175
LT Vol	155	0	0	175
Through Vol	0	0	0	0
RT Vol	0	71	290	0
Lane Flow Rate	180	83	337	203
Geometry Grp	7	7	2	2
Degree of Util (X)	0.309	0.115	0.427	0.305
Departure Headway (Hd)	6.175	5.013	4.563	5.389
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	586	718	779	669
Service Time	3.881	2.718	2.643	3.395
HCM Lane V/C Ratio	0.307	0.116	0.433	0.303
HCM Control Delay	11.6	8.4	11.1	10.7
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	1.3	0.4	2.2	1.3

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	202	69	0	0	0	0	57	20	8	64	0
Future Vol, veh/h	18	202	69	0	0	0	0	57	20	8	64	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	0	5	1	0	0	0	0	0	10	0	0	0
Mvmt Flow	21	235	80	0	0	0	0	66	23	9	74	0
Number of Lanes	0	1	1	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	9.7	8.3	8.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	8%	0%	11%
Vol Thru, %	74%	92%	0%	89%
Vol Right, %	26%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	77	220	69	72
LT Vol	0	18	0	8
Through Vol	57	202	0	64
RT Vol	20	0	69	0
Lane Flow Rate	90	256	80	84
Geometry Grp	2	7	7	2
Degree of Util (X)	0.115	0.352	0.096	0.112
Departure Headway (Hd)	4.639	4.955	4.297	4.822
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	774	727	834	744
Service Time	2.664	2.678	2.02	2.846
HCM Lane V/C Ratio	0.116	0.352	0.096	0.113
HCM Control Delay	8.3	10.4	7.5	8.5
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.4	1.6	0.3	0.4

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	0	4	221	0	0
Future Vol, veh/h	5	0	4	221	0	0
Conflicting Peds, #/hr	0	0	33	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	1080	872384	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	40	0	0	3	0	0
Mvmt Flow	6	0	5	257	0	0

Major/Minor	Minor2		Major1	
Conflicting Flow All	172	-	33	0
Stage 1	33	-	-	-
Stage 2	139	-	-	-
Critical Hdwy	7.6	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	6.6	-	-	-
Follow-up Hdwy	3.9	-	2.2	-
Pot Cap-1 Maneuver	704	0	1592	-
Stage 1	-	0	-	-
Stage 2	771	0	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	667	-	1552	-
Mov Cap-2 Maneuver	667	-	-	-
Stage 1	-	-	-	-
Stage 2	752	-	-	-

Approach	EB	NB
HCM Control Delay, s	10.4	0.1
HCM LOS	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1
Capacity (veh/h)	1552	-	667
HCM Lane V/C Ratio	0.003	-	0.009
HCM Control Delay (s)	7.3	0	10.4
HCM Lane LOS	A	A	B
HCM 95th %tile Q(veh)	0	-	0

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	286	0	0	3	0
Future Vol, veh/h	21	286	0	0	3	0
Conflicting Peds, #/hr	57	0	0	57	4	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	1080	852480	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	0	4	0	0	0	0
Mvmt Flow	30	414	0	0	4	0

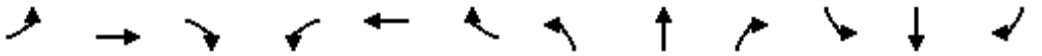
Major/Minor	Major1		Minor2	
Conflicting Flow All	57	0	328	-
Stage 1	-	-	57	-
Stage 2	-	-	271	-
Critical Hdwy	4.1	-	6.8	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.8	-
Follow-up Hdwy	2.2	-	3.5	-
Pot Cap-1 Maneuver	1560	-	647	0
Stage 1	-	-	-	0
Stage 2	-	-	756	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	1492	-	576	-
Mov Cap-2 Maneuver	-	-	576	-
Stage 1	-	-	-	-
Stage 2	-	-	723	-

Approach	EB	SB
HCM Control Delay, s	0.6	11.3
HCM LOS		B

Minor Lane/Major Mvmt	EBL	EBT	SBLn1
Capacity (veh/h)	1492	-	576
HCM Lane V/C Ratio	0.02	-	0.008
HCM Control Delay (s)	7.5	0.1	11.3
HCM Lane LOS	A	A	B
HCM 95th %tile Q(veh)	0.1	-	0

Capacity Analysis Summary Sheets

Year 2021 Weekday Evening Peak Hour Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	59	86	34	160	0	0	0	0	289	43
Future Volume (vph)	0	0	59	86	34	160	0	0	0	0	289	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		45
Storage Lanes	0		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.85	0.70							0.57
Frt			0.865		0.876							0.850
Flt Protected				0.950								
Satd. Flow (prot)	0	0	1542	1745	1111	0	0	0	0	0	1837	1561
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	1542	1489	1111	0	0	0	0	0	1837	888
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)			388	99	184							85
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		472			501			349			309	
Travel Time (s)		10.7			11.4			7.9			7.0	
Confl. Peds. (#/hr)	144		103	103		144	145		292	292		145
Confl. Bikes (#/hr)			2			6			6			22
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	3%	0%	5%	1%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	68	99	223	0	0	0	0	0	332	49
Turn Type			Prot	pm+pt	NA						NA	Perm
Protected Phases			9	1 4!	6						4!	
Permitted Phases				6								4
Detector Phase			9	1 4	6						4	4
Switch Phase												
Minimum Initial (s)			4.0		4.0						4.0	4.0
Minimum Split (s)			9.0		24.0						23.0	23.0
Total Split (s)			24.0		24.0						42.0	42.0
Total Split (%)			26.7%		26.7%						46.7%	46.7%
Yellow Time (s)			4.0		4.0						4.0	4.0
All-Red Time (s)			1.0		1.0						1.0	1.0
Lost Time Adjust (s)			0.0		0.0						0.0	0.0
Total Lost Time (s)			5.0		5.0						5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode			Max		Max						Max	Max
Act Effct Green (s)			19.0	61.0	19.0						37.0	37.0
Actuated g/C Ratio			0.21	0.68	0.21						0.41	0.41

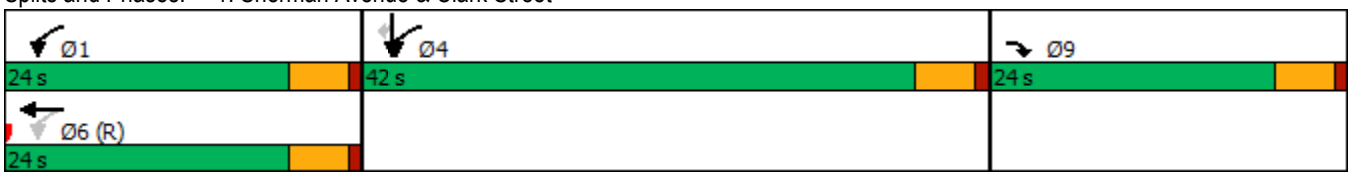
Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	9.0
Total Split (s)	24.0
Total Split (%)	27%
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio			0.11	0.08	0.59						0.44	0.12
Control Delay			0.3	1.3	14.9						21.4	1.9
Queue Delay			0.0	0.0	0.0						0.0	0.0
Total Delay			0.3	1.3	14.9						21.4	1.9
LOS			A	A	B						C	A
Approach Delay		0.3			10.7						18.9	
Approach LOS		A			B						B	
Queue Length 50th (ft)			0	0	18						132	0
Queue Length 95th (ft)			0	13	82						197	7
Internal Link Dist (ft)		392			421			269			229	
Turn Bay Length (ft)												45
Base Capacity (vph)			631	1214	379						755	415
Starvation Cap Reductn			0	0	0						0	0
Spillback Cap Reductn			0	0	0						0	0
Storage Cap Reductn			0	0	0						0	0
Reduced v/c Ratio			0.11	0.08	0.59						0.44	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2: and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 42.2%		ICU Level of Service A	
Analysis Period (min) 15			

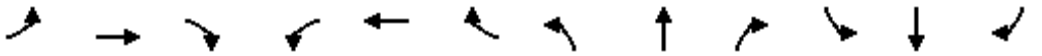
! Phase conflict between lane groups.

Splits and Phases: 1: Sherman Avenue & Clark Street



Lane Group	Ø1
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

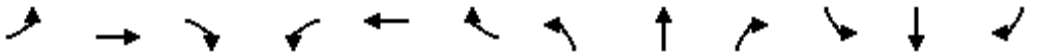


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	477	0	0	0	0	0	198	124	0	0	0
Future Volume (vph)	161	477	0	0	0	0	0	198	124	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	40		0	0		0	0		70	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90								0.88			
Frt									0.850			
Flt Protected	0.950											
Satd. Flow (prot)	1745	3250	0	0	0	0	0	3250	1531	0	0	0
Flt Permitted	0.950											
Satd. Flow (perm)	1570	3250	0	0	0	0	0	3250	1350	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	173								103			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		431			556			604			449	
Travel Time (s)		9.8			12.6			13.7			10.2	
Confl. Peds. (#/hr)	186		239	239		186	66		104	104		66
Confl. Bikes (#/hr)			32						7			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	2%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0			0			0	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	513	0	0	0	0	0	213	133	0	0	0
Turn Type	Perm	NA						NA	Perm			
Protected Phases		4						2				
Permitted Phases	4								2			
Detector Phase	4	4						2	2			
Switch Phase												
Minimum Initial (s)	4.0	4.0						4.0	4.0			
Minimum Split (s)	44.0	44.0						26.0	26.0			
Total Split (s)	44.0	44.0						26.0	26.0			
Total Split (%)	62.9%	62.9%						37.1%	37.1%			
Yellow Time (s)	4.0	4.0						4.0	4.0			
All-Red Time (s)	1.0	1.0						1.0	1.0			
Lost Time Adjust (s)	0.0	0.0						0.0	0.0			
Total Lost Time (s)	5.0	5.0						5.0	5.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max						Max	Max			
Act Effct Green (s)	39.0	39.0						21.0	21.0			
Actuated g/C Ratio	0.56	0.56						0.30	0.30			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.28						0.22	0.28			
Control Delay	1.9	8.7						19.1	8.2			
Queue Delay	0.0	0.0						0.0	0.0			
Total Delay	1.9	8.7						19.1	8.2			
LOS	A	A						B	A			
Approach Delay		7.0						14.9				
Approach LOS		A						B				
Queue Length 50th (ft)	0	55						35	9			
Queue Length 95th (ft)	23	82						61	46			
Internal Link Dist (ft)		351			476			524			369	
Turn Bay Length (ft)	40								70			
Base Capacity (vph)	951	1810						975	477			
Starvation Cap Reductn	0	0						0	0			
Spillback Cap Reductn	0	0						0	0			
Storage Cap Reductn	0	0						0	0			
Reduced v/c Ratio	0.18	0.28						0.22	0.28			

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.28			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Orrington Avenue & Church Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	366	189	0	0	0	0	243	53	27	333	0
Future Volume (vph)	46	366	189	0	0	0	0	243	53	27	333	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.87									1.00	
Frt		0.953							0.850			
Flt Protected		0.996									0.996	
Satd. Flow (prot)	0	2763	0	0	0	0	0	1637	1561	0	1612	0
Flt Permitted		0.996									0.968	
Satd. Flow (perm)	0	2713	0	0	0	0	0	1637	1561	0	1563	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		67							50			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		556			228			291			542	
Travel Time (s)		12.6			5.2			6.6			12.3	
Confl. Peds. (#/hr)	129		178	178		129	363		84	84		363
Confl. Bikes (#/hr)			19									2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	0%	2%	0%	0%	0%	0%	1%	0%	4%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0						0			0	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	626	0	0	0	0	0	253	55	0	375	0
Turn Type	Perm	NA						NA	custom	Perm	NA	
Protected Phases		10						2 6	6		2 6	
Permitted Phases	10									2 6		
Detector Phase	10	10						2 6	6	2 6	2 6	
Switch Phase												
Minimum Initial (s)	30.0	30.0							24.0			
Minimum Split (s)	36.0	36.0							30.0			
Total Split (s)	36.0	36.0							30.0			
Total Split (%)	32.7%	32.7%							27.3%			
Yellow Time (s)	4.5	4.5							4.5			
All-Red Time (s)	1.5	1.5							1.5			
Lost Time Adjust (s)		0.0							0.0			
Total Lost Time (s)		6.0							6.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max							None			
Act Effct Green (s)		30.0						72.0	24.0		72.0	
Actuated g/C Ratio		0.27						0.65	0.22		0.65	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	44.0
Total Split (s)	44.0
Total Split (%)	40%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.79						0.24	0.15		0.37	
Control Delay		41.6						8.4	12.3		9.9	
Queue Delay		0.0						0.0	0.0		0.0	
Total Delay		41.6						8.4	12.3		9.9	
LOS		D						A	B		A	
Approach Delay		41.6						9.1			9.9	
Approach LOS		D						A			A	
Queue Length 50th (ft)		194						67	3		110	
Queue Length 95th (ft)		266						104	36		164	
Internal Link Dist (ft)		476			148			211			462	
Turn Bay Length (ft)									50			
Base Capacity (vph)		788						1071	379		1023	
Starvation Cap Reductn		0						0	0		0	
Spillback Cap Reductn		0						0	0		0	
Storage Cap Reductn		0						0	0		0	
Reduced v/c Ratio		0.79						0.24	0.15		0.37	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 24.9		Intersection LOS: C	
Intersection Capacity Utilization 77.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Chicago Avenue & Church Street

Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Intersection Delay, s/veh	14.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	0	0	0	0	0	390	0	80	160	0
Future Vol, veh/h	0	0	0	0	0	390	0	80	160	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	2	0	7	5	0
Mvmt Flow	0	0	0	0	0	429	0	88	176	0
Number of Lanes	0	0	0	0	0	1	0	1	1	0

Approach	WB	SE
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	WB
Conflicting Lanes Left	2	1
Conflicting Approach Right	SE	NB
Conflicting Lanes Right	1	2
HCM Control Delay	14.8	11.5
HCM LOS	B	B

Lane	NBLn1	NBLn2	WBLn1	SELn1
Vol Left, %	100%	0%	0%	100%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	0%	100%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	280	80	390	160
LT Vol	280	0	0	160
Through Vol	0	0	0	0
RT Vol	0	80	390	0
Lane Flow Rate	308	88	429	176
Geometry Grp	7	7	2	2
Degree of Util (X)	0.553	0.13	0.59	0.292
Departure Headway (Hd)	6.467	5.319	4.956	5.972
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	557	673	733	600
Service Time	4.212	3.063	2.956	4.024
HCM Lane V/C Ratio	0.553	0.131	0.585	0.293
HCM Control Delay	17	8.9	14.8	11.5
HCM Lane LOS	C	A	B	B
HCM 95th-tile Q	3.3	0.4	3.9	1.2

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	312	111	0	0	0	0	61	36	15	107	0
Future Vol, veh/h	24	312	111	0	0	0	0	61	36	15	107	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	1	1	0	0	0	0	1	0	0	0	0
Mvmt Flow	25	325	116	0	0	0	0	64	38	16	111	0
Number of Lanes	0	1	1	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	11.6	8.8	9.3
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	7%	0%	12%
Vol Thru, %	63%	93%	0%	88%
Vol Right, %	37%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	336	111	122
LT Vol	0	24	0	15
Through Vol	61	312	0	107
RT Vol	36	0	111	0
Lane Flow Rate	101	350	116	127
Geometry Grp	2	7	7	2
Degree of Util (X)	0.139	0.496	0.141	0.181
Departure Headway (Hd)	4.944	5.102	4.38	5.133
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	722	704	815	696
Service Time	2.994	2.847	2.124	3.181
HCM Lane V/C Ratio	0.14	0.497	0.142	0.182
HCM Control Delay	8.8	12.8	7.8	9.3
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.5	2.8	0.5	0.7

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	1	358	0	0
Future Vol, veh/h	2	0	1	358	0	0
Conflicting Peds, #/hr	66	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	1080	872384	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	2	0	0
Mvmt Flow	2	0	1	393	0	0

Major/Minor	Minor2		Major1	
Conflicting Flow All	265	-	0	0
Stage 1	0	-	-	-
Stage 2	265	-	-	-
Critical Hdwy	6.8	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-
Follow-up Hdwy	3.5	-	2.2	-
Pot Cap-1 Maneuver	707	0	-	-
Stage 1	-	0	-	-
Stage 2	761	0	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	707	-	-	-
Mov Cap-2 Maneuver	707	-	-	-
Stage 1	-	-	-	-
Stage 2	761	-	-	-

Approach	EB	NB
HCM Control Delay, s	10.1	
HCM LOS	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1
Capacity (veh/h)	-	-	707
HCM Lane V/C Ratio	-	-	0.003
HCM Control Delay (s)	-	-	10.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	428	0	0	19	0
Future Vol, veh/h	18	428	0	0	19	0
Conflicting Peds, #/hr	95	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	1080	852480	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	19	446	0	0	20	0

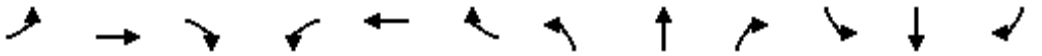
Major/Minor	Major1		Minor2	
Conflicting Flow All	95	0	357	-
Stage 1	-	-	95	-
Stage 2	-	-	262	-
Critical Hdwy	4.1	-	6.8	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.8	-
Follow-up Hdwy	2.2	-	3.5	-
Pot Cap-1 Maneuver	1512	-	620	0
Stage 1	-	-	-	0
Stage 2	-	-	764	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	1402	-	523	-
Mov Cap-2 Maneuver	-	-	523	-
Stage 1	-	-	-	-
Stage 2	-	-	708	-

Approach	EB	SB
HCM Control Delay, s	0.4	12.2
HCM LOS		B

Minor Lane/Major Mvmt	EBL	EBT	SBLn1
Capacity (veh/h)	1402	-	523
HCM Lane V/C Ratio	0.013	-	0.038
HCM Control Delay (s)	7.6	0.1	12.2
HCM Lane LOS	A	A	B
HCM 95th %tile Q(veh)	0	-	0.1

Capacity Analysis Summary Sheets

No-Build Weekday Morning Peak Hour Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	25	52	9	97	0	0	0	0	212	23
Future Volume (vph)	0	0	25	52	9	97	0	0	0	0	212	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		45
Storage Lanes	0		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.91	0.86							0.67
Frt			0.865		0.863							0.850
Flt Protected				0.950								
Satd. Flow (prot)	0	0	1375	1745	1147	0	0	0	0	0	1749	1351
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	1375	1589	1147	0	0	0	0	0	1749	899
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)			458	67	124							85
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		472			501			349			309	
Travel Time (s)		10.7			11.4			7.9			7.0	
Confl. Peds. (#/hr)	63		66	66		63	114					114
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	0%	0%	7%	0%	0%	0%	0%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)			0		0							0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	32	67	136	0	0	0	0	0	272	29
Turn Type			Prot	pm+pt	NA						NA	Perm
Protected Phases			9	1 4!	6						4!	
Permitted Phases				6								4
Detector Phase			9	1 4	6						4	4
Switch Phase												
Minimum Initial (s)			4.0		4.0						4.0	4.0
Minimum Split (s)			9.0		25.0						25.0	25.0
Total Split (s)			30.0		25.0						35.0	35.0
Total Split (%)			33.3%		27.8%						38.9%	38.9%
Yellow Time (s)			4.0		4.0						4.0	4.0
All-Red Time (s)			1.0		1.0						1.0	1.0
Lost Time Adjust (s)			0.0		0.0						0.0	0.0
Total Lost Time (s)			5.0		5.0						5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode			Max		Max						Max	Max
Act Effct Green (s)			25.0	55.0	20.0						30.0	30.0
Actuated g/C Ratio			0.28	0.61	0.22						0.33	0.33

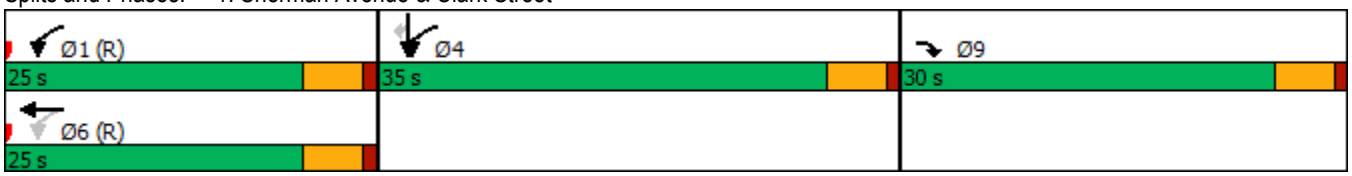
Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	9.0
Total Split (s)	25.0
Total Split (%)	28%
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio			0.04	0.06	0.39						0.47	0.08
Control Delay			0.1	2.1	10.6						26.9	0.4
Queue Delay			0.0	0.0	0.0						0.0	0.0
Total Delay			0.1	2.1	10.6						26.9	0.4
LOS			A	A	B						C	A
Approach Delay		0.1			7.8						24.4	
Approach LOS		A			A						C	
Queue Length 50th (ft)			0	0	5						121	0
Queue Length 95th (ft)			0	11	36						162	0
Internal Link Dist (ft)		392			421			269			229	
Turn Bay Length (ft)												45
Base Capacity (vph)			712	1092	351						583	356
Starvation Cap Reductn			0	0	0						0	0
Spillback Cap Reductn			0	0	0						0	0
Storage Cap Reductn			0	0	0						0	0
Reduced v/c Ratio			0.04	0.06	0.39						0.47	0.08

Intersection Summary

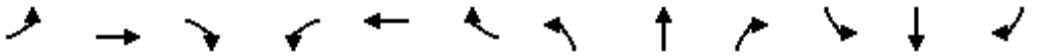
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 1:WBL and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 16.6 Intersection LOS: B
Intersection Capacity Utilization 38.3% ICU Level of Service A
Analysis Period (min) 15
! Phase conflict between lane groups.

Splits and Phases: 1: Sherman Avenue & Clark Street



Lane Group	Ø1
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

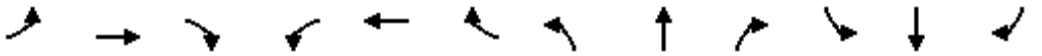


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	434	0	0	0	0	0	120	71	0	0	0
Future Volume (vph)	109	434	0	0	0	0	0	120	71	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	40		0	0		0	0		70	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98								0.94			
Frt									0.850			
Flt Protected	0.950											
Satd. Flow (prot)	1711	3188	0	0	0	0	0	3219	1531	0	0	0
Flt Permitted	0.950											
Satd. Flow (perm)	1669	3188	0	0	0	0	0	3219	1443	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	133								87			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		431			556			604			449	
Travel Time (s)		9.8			12.6			13.7			10.2	
Confl. Peds. (#/hr)	45		110	110		45	36		46	46		36
Confl. Bikes (#/hr)			37									
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	0%	0%	0%	0%	0%	3%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0			0			0	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	529	0	0	0	0	0	146	87	0	0	0
Turn Type	Perm	NA						NA	Perm			
Protected Phases		4						2				
Permitted Phases	4								2			
Detector Phase	4	4						2	2			
Switch Phase												
Minimum Initial (s)	4.0	4.0						4.0	4.0			
Minimum Split (s)	44.0	44.0						26.0	26.0			
Total Split (s)	44.0	44.0						26.0	26.0			
Total Split (%)	62.9%	62.9%						37.1%	37.1%			
Yellow Time (s)	4.0	4.0						4.0	4.0			
All-Red Time (s)	1.0	1.0						1.0	1.0			
Lost Time Adjust (s)	0.0	0.0						0.0	0.0			
Total Lost Time (s)	5.0	5.0						5.0	5.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max						Max	Max			
Act Effct Green (s)	39.0	39.0						21.0	21.0			
Actuated g/C Ratio	0.56	0.56						0.30	0.30			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.13	0.30						0.15	0.18			
Control Delay	1.9	8.8						18.5	5.8			
Queue Delay	0.0	0.0						0.0	0.0			
Total Delay	1.9	8.8						18.5	5.8			
LOS	A	A						B	A			
Approach Delay		7.4						13.8				
Approach LOS		A						B				
Queue Length 50th (ft)	0	57						24	0			
Queue Length 95th (ft)	16	75						40	24			
Internal Link Dist (ft)		351			476			524			369	
Turn Bay Length (ft)	40								70			
Base Capacity (vph)	988	1776						965	493			
Starvation Cap Reductn	0	0						0	0			
Spillback Cap Reductn	0	0						0	0			
Storage Cap Reductn	0	0						0	0			
Reduced v/c Ratio	0.13	0.30						0.15	0.18			

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.30			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Orrington Avenue & Church Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	282	164	0	0	0	0	384	38	20	199	0
Future Volume (vph)	59	282	164	0	0	0	0	384	38	20	199	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94									1.00	
Frt		0.951							0.850			
Flt Protected		0.994									0.995	
Satd. Flow (prot)	0	2860	0	0	0	0	0	1621	1516	0	1533	0
Flt Permitted		0.994									0.952	
Satd. Flow (perm)	0	2818	0	0	0	0	0	1621	1516	0	1466	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		72							50			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		556			228			291			542	
Travel Time (s)		12.6			5.2			6.6			12.3	
Confl. Peds. (#/hr)	69		74	74		69	162		8	8		162
Confl. Bikes (#/hr)			3									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	4%	3%	0%	0%	0%	0%	2%	3%	20%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0						0			0	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	549	0	0	0	0	0	417	41	0	238	0
Turn Type	Perm	NA						NA	custom	Perm	NA	
Protected Phases		10						2 6	6		2 6	
Permitted Phases	10									2 6		
Detector Phase	10	10						2 6	6	2 6	2 6	
Switch Phase												
Minimum Initial (s)	30.0	30.0							24.0			
Minimum Split (s)	36.0	36.0							30.0			
Total Split (s)	36.0	36.0							30.0			
Total Split (%)	32.7%	32.7%							27.3%			
Yellow Time (s)	4.5	4.5							4.5			
All-Red Time (s)	1.5	1.5							1.5			
Lost Time Adjust (s)		0.0							0.0			
Total Lost Time (s)		6.0							6.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max							None			
Act Effct Green (s)		30.0						72.0	24.0		72.0	
Actuated g/C Ratio		0.27						0.65	0.22		0.65	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	42.0
Minimum Split (s)	44.0
Total Split (s)	44.0
Total Split (%)	40%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.67						0.39	0.11		0.25	
Control Delay		35.4						10.2	8.4		8.6	
Queue Delay		0.0						0.0	0.0		0.0	
Total Delay		35.4						10.2	8.4		8.6	
LOS		D						B	A		A	
Approach Delay		35.4						10.0			8.6	
Approach LOS		D						B			A	
Queue Length 50th (ft)		158						125	0		63	
Queue Length 95th (ft)		220						184	23		100	
Internal Link Dist (ft)		476			148			211			462	
Turn Bay Length (ft)									50			
Base Capacity (vph)		820						1061	369		959	
Starvation Cap Reductn		0						0	0		0	
Spillback Cap Reductn		0						0	0		0	
Storage Cap Reductn		0						0	0		0	
Reduced v/c Ratio		0.67						0.39	0.11		0.25	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 20.9		Intersection LOS: C	
Intersection Capacity Utilization 93.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Chicago Avenue & Church Street

Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	0	0	0	0	0	295	0	72	175	0
Future Vol, veh/h	0	0	0	0	0	295	0	72	175	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	0	0	0	0	0	5	0	7	3	0
Mvmt Flow	0	0	0	0	0	343	0	84	203	0
Number of Lanes	0	0	0	0	0	1	0	1	1	0

Approach	WB	SE
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	WB
Conflicting Lanes Left	2	1
Conflicting Approach Right	SE	NB
Conflicting Lanes Right	1	2
HCM Control Delay	11.2	10.8
HCM LOS	B	B

Lane	NBLn1	NBLn2	WBLn1	SELn1
Vol Left, %	100%	0%	0%	100%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	0%	100%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	158	72	295	175
LT Vol	158	0	0	175
Through Vol	0	0	0	0
RT Vol	0	72	295	0
Lane Flow Rate	184	84	343	203
Geometry Grp	7	7	2	2
Degree of Util (X)	0.316	0.117	0.436	0.306
Departure Headway (Hd)	6.196	5.034	4.575	5.416
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	582	716	779	667
Service Time	3.901	2.739	2.657	3.422
HCM Lane V/C Ratio	0.316	0.117	0.44	0.304
HCM Control Delay	11.7	8.4	11.2	10.8
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	1.3	0.4	2.2	1.3

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	224	72	0	0	0	0	59	20	8	65	0
Future Vol, veh/h	23	224	72	0	0	0	0	59	20	8	65	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	0	5	1	0	0	0	0	0	10	0	0	0
Mvmt Flow	27	260	84	0	0	0	0	69	23	9	76	0
Number of Lanes	0	1	1	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	10.2	8.4	8.6
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	9%	0%	11%
Vol Thru, %	75%	91%	0%	89%
Vol Right, %	25%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	79	247	72	73
LT Vol	0	23	0	8
Through Vol	59	224	0	65
RT Vol	20	0	72	0
Lane Flow Rate	92	287	84	85
Geometry Grp	2	7	7	2
Degree of Util (X)	0.121	0.397	0.1	0.116
Departure Headway (Hd)	4.729	4.974	4.31	4.909
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	758	724	831	730
Service Time	2.758	2.702	2.038	2.939
HCM Lane V/C Ratio	0.121	0.396	0.101	0.116
HCM Control Delay	8.4	11	7.5	8.6
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.4	1.9	0.3	0.4

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	0	4	225	0	0
Future Vol, veh/h	5	0	4	225	0	0
Conflicting Peds, #/hr	0	0	36	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	1080	872384	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	40	0	0	3	0	0
Mvmt Flow	6	0	5	262	0	0

Major/Minor	Minor2		Major1	
Conflicting Flow All	177	-	36	0
Stage 1	36	-	-	-
Stage 2	141	-	-	-
Critical Hdwy	7.6	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	6.6	-	-	-
Follow-up Hdwy	3.9	-	2.2	-
Pot Cap-1 Maneuver	698	0	1588	-
Stage 1	-	0	-	-
Stage 2	769	0	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	658	-	1544	-
Mov Cap-2 Maneuver	658	-	-	-
Stage 1	-	-	-	-
Stage 2	748	-	-	-

Approach	EB	NB
HCM Control Delay, s	10.5	0.1
HCM LOS	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1
Capacity (veh/h)	1544	-	658
HCM Lane V/C Ratio	0.003	-	0.009
HCM Control Delay (s)	7.3	0	10.5
HCM Lane LOS	A	A	B
HCM 95th %tile Q(veh)	0	-	0

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	319	0	0	3	0
Future Vol, veh/h	21	319	0	0	3	0
Conflicting Peds, #/hr	63	0	0	63	4	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	1080	852480	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	0	4	0	0	0	0
Mvmt Flow	30	462	0	0	4	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	63	0	358	-
Stage 1	-	-	63	-
Stage 2	-	-	295	-
Critical Hdwy	4.1	-	6.8	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.8	-
Follow-up Hdwy	2.2	-	3.5	-
Pot Cap-1 Maneuver	1553	-	619	0
Stage 1	-	-	-	0
Stage 2	-	-	736	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	1478	-	546	-
Mov Cap-2 Maneuver	-	-	546	-
Stage 1	-	-	-	-
Stage 2	-	-	701	-

Approach	EB	SB
HCM Control Delay, s	0.6	11.6
HCM LOS		B

Minor Lane/Major Mvmt	EBL	EBT	SBLn1
Capacity (veh/h)	1478	-	546
HCM Lane V/C Ratio	0.021	-	0.008
HCM Control Delay (s)	7.5	0.1	11.6
HCM Lane LOS	A	A	B
HCM 95th %tile Q(veh)	0.1	-	0

Capacity Analysis Summary Sheets

No-Build Weekday Evening Peak Hour Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	60	87	35	163	0	0	0	0	294	44
Future Volume (vph)	0	0	60	87	35	163	0	0	0	0	294	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		45
Storage Lanes	0		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.84	0.68							0.53
Frt			0.865		0.876							0.850
Flt Protected				0.950								
Satd. Flow (prot)	0	0	1542	1745	1068	0	0	0	0	0	1837	1561
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	1542	1465	1068	0	0	0	0	0	1837	823
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)			378	100	187							85
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		472			501			349			309	
Travel Time (s)		10.7			11.4			7.9			7.0	
Confl. Peds. (#/hr)	158		113	113		158	160		318	318		160
Confl. Bikes (#/hr)			2			7			7			24
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	3%	0%	5%	1%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	69	100	227	0	0	0	0	0	338	51
Turn Type			Prot	pm+pt	NA						NA	Perm
Protected Phases			9	1 4!	6						4!	
Permitted Phases				6								4
Detector Phase			9	1 4	6						4	4
Switch Phase												
Minimum Initial (s)			4.0		4.0						4.0	4.0
Minimum Split (s)			9.0		24.0						23.0	23.0
Total Split (s)			24.0		24.0						42.0	42.0
Total Split (%)			26.7%		26.7%						46.7%	46.7%
Yellow Time (s)			4.0		4.0						4.0	4.0
All-Red Time (s)			1.0		1.0						1.0	1.0
Lost Time Adjust (s)			0.0		0.0						0.0	0.0
Total Lost Time (s)			5.0		5.0						5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode			Max		Max						Max	Max
Act Effct Green (s)			19.0	61.0	19.0						37.0	37.0
Actuated g/C Ratio			0.21	0.68	0.21						0.41	0.41

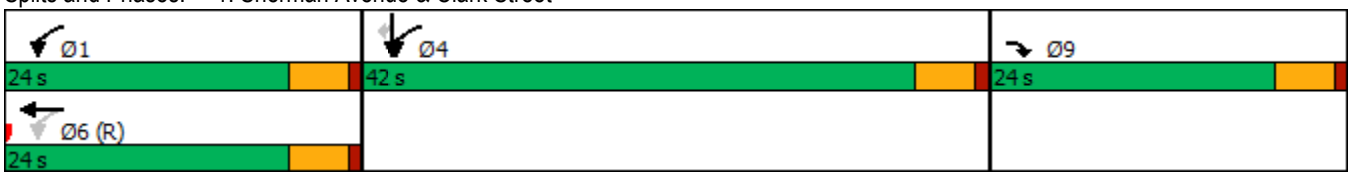
Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	9.0
Total Split (s)	24.0
Total Split (%)	27%
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio			0.11	0.08	0.61						0.45	0.13
Control Delay			0.4	1.2	15.7						21.5	2.2
Queue Delay			0.0	0.0	0.0						0.0	0.0
Total Delay			0.4	1.2	15.7						21.5	2.2
LOS			A	A	B						C	A
Approach Delay		0.4			11.3						19.0	
Approach LOS		A			B						B	
Queue Length 50th (ft)			0	0	19						135	0
Queue Length 95th (ft)			0	13	85						201	8
Internal Link Dist (ft)		392			421			269			229	
Turn Bay Length (ft)												45
Base Capacity (vph)			623	1214	372						755	388
Starvation Cap Reductn			0	0	0						0	0
Spillback Cap Reductn			0	0	0						0	0
Storage Cap Reductn			0	0	0						0	0
Reduced v/c Ratio			0.11	0.08	0.61						0.45	0.13

Intersection Summary

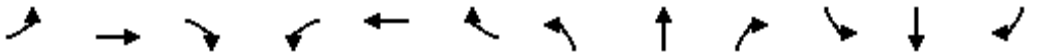
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2: and 6:WBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 14.1 Intersection LOS: B
Intersection Capacity Utilization 42.8% ICU Level of Service A
Analysis Period (min) 15
! Phase conflict between lane groups.

Splits and Phases: 1: Sherman Avenue & Clark Street



Lane Group	Ø1
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

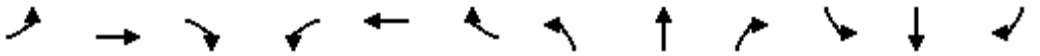


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	509	0	0	0	0	0	201	144	0	0	0
Future Volume (vph)	164	509	0	0	0	0	0	201	144	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	40		0	0		0	0		70	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.89								0.87			
Frt									0.850			
Flt Protected	0.950											
Satd. Flow (prot)	1745	3250	0	0	0	0	0	3250	1531	0	0	0
Flt Permitted	0.950											
Satd. Flow (perm)	1552	3250	0	0	0	0	0	3250	1334	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	176								84			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		431			556			604			449	
Travel Time (s)		9.8			12.6			13.7			10.2	
Confl. Peds. (#/hr)	205		263	263		205	73		114	114		73
Confl. Bikes (#/hr)			35						8			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	2%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0			0			0	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	547	0	0	0	0	0	216	155	0	0	0
Turn Type	Perm	NA						NA	Perm			
Protected Phases		4						2				
Permitted Phases	4								2			
Detector Phase	4	4						2	2			
Switch Phase												
Minimum Initial (s)	4.0	4.0						4.0	4.0			
Minimum Split (s)	44.0	44.0						26.0	26.0			
Total Split (s)	44.0	44.0						26.0	26.0			
Total Split (%)	62.9%	62.9%						37.1%	37.1%			
Yellow Time (s)	4.0	4.0						4.0	4.0			
All-Red Time (s)	1.0	1.0						1.0	1.0			
Lost Time Adjust (s)	0.0	0.0						0.0	0.0			
Total Lost Time (s)	5.0	5.0						5.0	5.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max						Max	Max			
Act Effct Green (s)	39.0	39.0						21.0	21.0			
Actuated g/C Ratio	0.56	0.56						0.30	0.30			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.30						0.22	0.34			
Control Delay	1.9	8.8						19.1	11.9			
Queue Delay	0.0	0.0						0.0	0.0			
Total Delay	1.9	8.8						19.1	11.9			
LOS	A	A						B	B			
Approach Delay		7.1						16.1				
Approach LOS		A						B				
Queue Length 50th (ft)	0	60						36	22			
Queue Length 95th (ft)	23	87						61	66			
Internal Link Dist (ft)		351			476			524			369	
Turn Bay Length (ft)	40								70			
Base Capacity (vph)	942	1810						975	459			
Starvation Cap Reductn	0	0						0	0			
Spillback Cap Reductn	0	0						0	0			
Storage Cap Reductn	0	0						0	0			
Reduced v/c Ratio	0.19	0.30						0.22	0.34			

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Orrington Avenue & Church Street



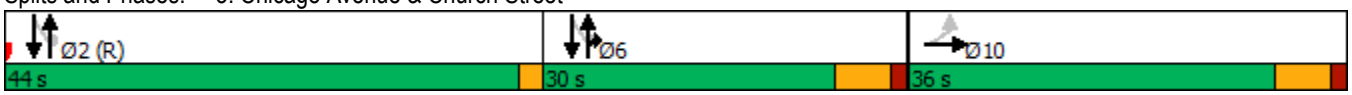
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	399	196	0	0	0	0	270	65	41	355	0
Future Volume (vph)	58	399	196	0	0	0	0	270	65	41	355	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.86									1.00	
Frt		0.955							0.850			
Flt Protected		0.996									0.995	
Satd. Flow (prot)	0	2753	0	0	0	0	0	1637	1561	0	1609	0
Flt Permitted		0.996									0.946	
Satd. Flow (perm)	0	2690	0	0	0	0	0	1637	1561	0	1525	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60							50			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		556			228			291			542	
Travel Time (s)		12.6			5.2			6.6			12.3	
Confl. Peds. (#/hr)	142		196	196		142	399		92	92		399
Confl. Bikes (#/hr)			21									2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	0%	2%	0%	0%	0%	0%	1%	0%	4%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0						0			0	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	680	0	0	0	0	0	281	68	0	413	0
Turn Type	Perm	NA						NA	custom	Perm	NA	
Protected Phases		10						2 6	6		2 6	
Permitted Phases	10									2 6		
Detector Phase	10	10						2 6	6	2 6	2 6	
Switch Phase												
Minimum Initial (s)	30.0	30.0							24.0			
Minimum Split (s)	36.0	36.0							30.0			
Total Split (s)	36.0	36.0							30.0			
Total Split (%)	32.7%	32.7%							27.3%			
Yellow Time (s)	4.5	4.5							4.5			
All-Red Time (s)	1.5	1.5							1.5			
Lost Time Adjust (s)		0.0							0.0			
Total Lost Time (s)		6.0							6.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max							None			
Act Effct Green (s)		30.0						72.0	24.0		72.0	
Actuated g/C Ratio		0.27						0.65	0.22		0.65	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	44.0
Total Split (s)	44.0
Total Split (%)	40%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.88						0.26	0.18		0.41	
Control Delay		48.5						8.7	15.3		10.5	
Queue Delay		0.0						0.0	0.0		0.0	
Total Delay		48.5						8.7	15.3		10.5	
LOS		D						A	B		B	
Approach Delay		48.5						10.0			10.5	
Approach LOS		D						A			B	
Queue Length 50th (ft)		222						75	10		126	
Queue Length 95th (ft)		#327						116	47		188	
Internal Link Dist (ft)		476			148			211			462	
Turn Bay Length (ft)									50			
Base Capacity (vph)		777						1071	379		998	
Starvation Cap Reductn		0						0	0		0	
Spillback Cap Reductn		0						0	0		0	
Storage Cap Reductn		0						0	0		0	
Reduced v/c Ratio		0.88						0.26	0.18		0.41	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 28.3		Intersection LOS: C	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Chicago Avenue & Church Street



Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Intersection Delay, s/veh	14.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	0	0	0	0	0	397	0	81	160	0
Future Vol, veh/h	0	0	0	0	0	397	0	81	160	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	2	0	7	5	0
Mvmt Flow	0	0	0	0	0	436	0	89	176	0
Number of Lanes	0	0	0	0	0	1	0	1	1	0

Approach	WB	SE
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	WB
Conflicting Lanes Left	2	1
Conflicting Approach Right	SE	NB
Conflicting Lanes Right	1	2
HCM Control Delay	15.2	11.6
HCM LOS	C	B

Lane	NBLn1	NBLn2	WBLn1	SELn1
Vol Left, %	100%	0%	0%	100%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	0%	100%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	81	397	160
LT Vol	285	0	0	160
Through Vol	0	0	0	0
RT Vol	0	81	397	0
Lane Flow Rate	313	89	436	176
Geometry Grp	7	7	2	2
Degree of Util (X)	0.565	0.132	0.603	0.294
Departure Headway (Hd)	6.498	5.349	4.979	6.013
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	554	668	729	596
Service Time	4.243	3.094	2.979	4.066
HCM Lane V/C Ratio	0.565	0.133	0.598	0.295
HCM Control Delay	17.4	8.9	15.2	11.6
HCM Lane LOS	C	A	C	B
HCM 95th-tile Q	3.5	0.5	4.1	1.2

Intersection	
Intersection Delay, s/veh	11.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	338	114	0	0	0	0	63	37	15	111	0
Future Vol, veh/h	28	338	114	0	0	0	0	63	37	15	111	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	1	1	0	0	0	0	1	0	0	0	0
Mvmt Flow	29	352	119	0	0	0	0	66	39	16	116	0
Number of Lanes	0	1	1	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	12.5	9	9.5
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	8%	0%	12%
Vol Thru, %	63%	92%	0%	88%
Vol Right, %	37%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	366	114	126
LT Vol	0	28	0	15
Through Vol	63	338	0	111
RT Vol	37	0	114	0
Lane Flow Rate	104	381	119	131
Geometry Grp	2	7	7	2
Degree of Util (X)	0.146	0.543	0.145	0.19
Departure Headway (Hd)	5.034	5.129	4.404	5.218
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	708	702	810	685
Service Time	3.09	2.879	2.154	3.273
HCM Lane V/C Ratio	0.147	0.543	0.147	0.191
HCM Control Delay	9	13.9	7.9	9.5
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.5	3.3	0.5	0.7

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	1	364	0	0
Future Vol, veh/h	2	0	1	364	0	0
Conflicting Peds, #/hr	73	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	108	0	872384	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	2	0	0
Mvmt Flow	2	0	1	400	0	0

Major/Minor	Minor2		Major1	
Conflicting Flow All	275	-	0	0
Stage 1	0	-	-	-
Stage 2	275	-	-	-
Critical Hdwy	6.8	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-
Follow-up Hdwy	3.5	-	2.2	-
Pot Cap-1 Maneuver	697	0	-	-
Stage 1	-	0	-	-
Stage 2	753	0	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	697	-	-	-
Mov Cap-2 Maneuver	697	-	-	-
Stage 1	-	-	-	-
Stage 2	753	-	-	-

Approach	EB	NB
HCM Control Delay, s	10.2	
HCM LOS	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1
Capacity (veh/h)	-	-	697
HCM Lane V/C Ratio	-	-	0.003
HCM Control Delay (s)	-	-	10.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	487	0	0	19	0
Future Vol, veh/h	18	487	0	0	19	0
Conflicting Peds, #/hr	105	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	1080	852480	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	19	507	0	0	20	0

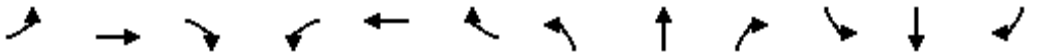
Major/Minor	Major1		Minor2	
Conflicting Flow All	105	0	398	-
Stage 1	-	-	105	-
Stage 2	-	-	293	-
Critical Hdwy	4.1	-	6.8	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.8	-
Follow-up Hdwy	2.2	-	3.5	-
Pot Cap-1 Maneuver	1499	-	585	0
Stage 1	-	-	-	0
Stage 2	-	-	737	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	1379	-	486	-
Mov Cap-2 Maneuver	-	-	486	-
Stage 1	-	-	-	-
Stage 2	-	-	678	-

Approach	EB	SB
HCM Control Delay, s	0.4	12.7
HCM LOS		B

Minor Lane/Major Mvmt	EBL	EBT	SBLn1
Capacity (veh/h)	1379	-	486
HCM Lane V/C Ratio	0.014	-	0.041
HCM Control Delay (s)	7.6	0.1	12.7
HCM Lane LOS	A	A	B
HCM 95th %tile Q(veh)	0	-	0.1

Capacity Analysis Summary Sheets

Projected Weekday Morning Peak Hour Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	60	87	38	171	0	0	0	0	294	44
Future Volume (vph)	0	0	60	87	38	171	0	0	0	0	294	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		45
Storage Lanes	0		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.84	0.68							0.53
Frt			0.865		0.877							0.850
Flt Protected				0.950								
Satd. Flow (prot)	0	0	1542	1745	1073	0	0	0	0	0	1837	1561
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	1542	1465	1073	0	0	0	0	0	1837	823
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)			378	100	197							85
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		472			501			349			309	
Travel Time (s)		10.7			11.4			7.9			7.0	
Confl. Peds. (#/hr)	158		113	113		158	160		318	318		160
Confl. Bikes (#/hr)			2			7			7			24
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	3%	0%	5%	1%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	69	100	241	0	0	0	0	0	338	51
Turn Type			Prot	pm+pt	NA						NA	Perm
Protected Phases			9	1 4!	6						4!	
Permitted Phases				6								4
Detector Phase			9	1 4	6						4	4
Switch Phase												
Minimum Initial (s)			4.0		4.0						4.0	4.0
Minimum Split (s)			9.0		24.0						23.0	23.0
Total Split (s)			24.0		24.0						42.0	42.0
Total Split (%)			26.7%		26.7%						46.7%	46.7%
Yellow Time (s)			4.0		4.0						4.0	4.0
All-Red Time (s)			1.0		1.0						1.0	1.0
Lost Time Adjust (s)			0.0		0.0						0.0	0.0
Total Lost Time (s)			5.0		5.0						5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode			Max		Max						Max	Max
Act Effct Green (s)			19.0	61.0	19.0						37.0	37.0
Actuated g/C Ratio			0.21	0.68	0.21						0.41	0.41

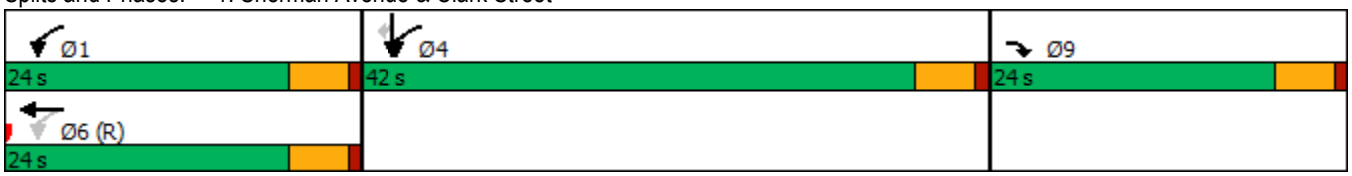
Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	9.0
Total Split (s)	24.0
Total Split (%)	27%
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio			0.11	0.08	0.63						0.45	0.13
Control Delay			0.4	1.2	16.2						21.5	2.2
Queue Delay			0.0	0.0	0.0						0.0	0.0
Total Delay			0.4	1.2	16.2						21.5	2.2
LOS			A	A	B						C	A
Approach Delay		0.4			11.8						19.0	
Approach LOS		A			B						B	
Queue Length 50th (ft)			0	0	21						135	0
Queue Length 95th (ft)			0	13	91						201	8
Internal Link Dist (ft)		392			421			269			229	
Turn Bay Length (ft)												45
Base Capacity (vph)			623	1214	381						755	388
Starvation Cap Reductn			0	0	0						0	0
Spillback Cap Reductn			0	0	0						0	0
Storage Cap Reductn			0	0	0						0	0
Reduced v/c Ratio			0.11	0.08	0.63						0.45	0.13

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2: and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 14.3		Intersection LOS: B	
Intersection Capacity Utilization 42.8%		ICU Level of Service A	
Analysis Period (min) 15			

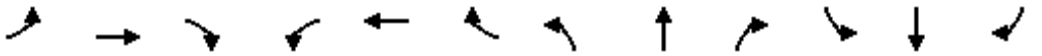
! Phase conflict between lane groups.

Splits and Phases: 1: Sherman Avenue & Clark Street



Lane Group	Ø1
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

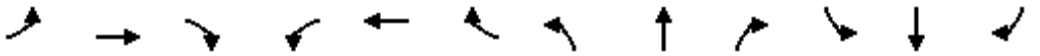


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	512	0	0	0	0	0	203	145	0	0	0
Future Volume (vph)	166	512	0	0	0	0	0	203	145	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	40		0	0		0	0		70	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.89								0.87			
Frt									0.850			
Flt Protected	0.950											
Satd. Flow (prot)	1745	3250	0	0	0	0	0	3250	1531	0	0	0
Flt Permitted	0.950											
Satd. Flow (perm)	1552	3250	0	0	0	0	0	3250	1334	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	178								83			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		431			556			604			449	
Travel Time (s)		9.8			12.6			13.7			10.2	
Confl. Peds. (#/hr)	205		263	263		205	73		114	114		73
Confl. Bikes (#/hr)			35						8			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	0%	0%	0%	0%	0%	2%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0			0			0	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	551	0	0	0	0	0	218	156	0	0	0
Turn Type	Perm	NA						NA	Perm			
Protected Phases		4						2				
Permitted Phases	4								2			
Detector Phase	4	4						2	2			
Switch Phase												
Minimum Initial (s)	4.0	4.0						4.0	4.0			
Minimum Split (s)	44.0	44.0						26.0	26.0			
Total Split (s)	44.0	44.0						26.0	26.0			
Total Split (%)	62.9%	62.9%						37.1%	37.1%			
Yellow Time (s)	4.0	4.0						4.0	4.0			
All-Red Time (s)	1.0	1.0						1.0	1.0			
Lost Time Adjust (s)	0.0	0.0						0.0	0.0			
Total Lost Time (s)	5.0	5.0						5.0	5.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max						Max	Max			
Act Effct Green (s)	39.0	39.0						21.0	21.0			
Actuated g/C Ratio	0.56	0.56						0.30	0.30			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.30						0.22	0.34			
Control Delay	1.9	8.8						19.2	12.1			
Queue Delay	0.0	0.0						0.0	0.0			
Total Delay	1.9	8.8						19.2	12.1			
LOS	A	A						B	B			
Approach Delay		7.1						16.2				
Approach LOS		A						B				
Queue Length 50th (ft)	0	60						36	23			
Queue Length 95th (ft)	23	88						62	67			
Internal Link Dist (ft)		351			476			524			369	
Turn Bay Length (ft)	40								70			
Base Capacity (vph)	943	1810						975	458			
Starvation Cap Reductn	0	0						0	0			
Spillback Cap Reductn	0	0						0	0			
Storage Cap Reductn	0	0						0	0			
Reduced v/c Ratio	0.19	0.30						0.22	0.34			

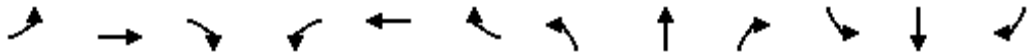
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Orrington Avenue & Church Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	403	196	0	0	0	0	270	67	43	355	0
Future Volume (vph)	58	403	196	0	0	0	0	270	67	43	355	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.86									1.00	
Frt		0.955							0.850			
Flt Protected		0.996									0.995	
Satd. Flow (prot)	0	2755	0	0	0	0	0	1637	1561	0	1609	0
Flt Permitted		0.996									0.943	
Satd. Flow (perm)	0	2692	0	0	0	0	0	1637	1561	0	1520	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59							50			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		556			228			291			542	
Travel Time (s)		12.6			5.2			6.6			12.3	
Confl. Peds. (#/hr)	142		196	196		142	399		92	92		399
Confl. Bikes (#/hr)			21									2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	6%	0%	2%	0%	0%	0%	0%	1%	0%	4%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0						0			0	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	684	0	0	0	0	0	281	70	0	415	0
Turn Type	Perm	NA						NA	custom	Perm	NA	
Protected Phases		10						2 6	6		2 6	
Permitted Phases	10									2 6		
Detector Phase	10	10						2 6	6	2 6	2 6	
Switch Phase												
Minimum Initial (s)	30.0	30.0							24.0			
Minimum Split (s)	36.0	36.0							30.0			
Total Split (s)	36.0	36.0							30.0			
Total Split (%)	32.7%	32.7%							27.3%			
Yellow Time (s)	4.5	4.5							4.5			
All-Red Time (s)	1.5	1.5							1.5			
Lost Time Adjust (s)		0.0							0.0			
Total Lost Time (s)		6.0							6.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max							None			
Act Effct Green (s)		30.0						72.0	24.0		72.0	
Actuated g/C Ratio		0.27						0.65	0.22		0.65	

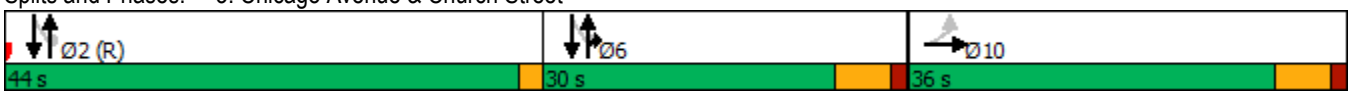
Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	44.0
Total Split (s)	44.0
Total Split (%)	40%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.88						0.26	0.18		0.42	
Control Delay		49.1						8.7	15.7		10.6	
Queue Delay		0.0						0.0	0.0		0.0	
Total Delay		49.1						8.7	15.7		10.6	
LOS		D						A	B		B	
Approach Delay		49.1						10.1			10.6	
Approach LOS		D						B			B	
Queue Length 50th (ft)		225						75	11		127	
Queue Length 95th (ft)		#331						116	49		189	
Internal Link Dist (ft)		476			148			211			462	
Turn Bay Length (ft)									50			
Base Capacity (vph)		777						1071	379		994	
Starvation Cap Reductn		0						0	0		0	
Spillback Cap Reductn		0						0	0		0	
Storage Cap Reductn		0						0	0		0	
Reduced v/c Ratio		0.88						0.26	0.18		0.42	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 28.7		Intersection LOS: C	
Intersection Capacity Utilization 79.4%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Chicago Avenue & Church Street



Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	0	0	0	0	0	295	0	73	175	0
Future Vol, veh/h	0	0	0	0	0	295	0	73	175	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	0	0	0	0	0	5	0	7	3	0
Mvmt Flow	0	0	0	0	0	343	0	85	203	0
Number of Lanes	0	0	0	0	0	1	0	1	1	0

Approach	WB	SE
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	WB
Conflicting Lanes Left	2	1
Conflicting Approach Right	SE	NB
Conflicting Lanes Right	1	2
HCM Control Delay	11.2	10.8
HCM LOS	B	B

Lane	NBLn1	NBLn2	WBLn1	SELn1
Vol Left, %	100%	0%	0%	100%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	0%	100%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	161	73	295	175
LT Vol	161	0	0	175
Through Vol	0	0	0	0
RT Vol	0	73	295	0
Lane Flow Rate	187	85	343	203
Geometry Grp	7	7	2	2
Degree of Util (X)	0.322	0.119	0.437	0.307
Departure Headway (Hd)	6.198	5.036	4.586	5.424
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	582	716	775	665
Service Time	3.904	2.742	2.671	3.431
HCM Lane V/C Ratio	0.321	0.119	0.443	0.305
HCM Control Delay	11.8	8.4	11.2	10.8
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	1.4	0.4	2.2	1.3

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	226	76	0	0	0	0	59	20	8	65	0
Future Vol, veh/h	26	226	76	0	0	0	0	59	20	8	65	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	0	5	1	0	0	0	0	0	10	0	0	0
Mvmt Flow	30	263	88	0	0	0	0	69	23	9	76	0
Number of Lanes	0	1	1	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	10.3	8.4	8.6
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	10%	0%	11%
Vol Thru, %	75%	90%	0%	89%
Vol Right, %	25%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	79	252	76	73
LT Vol	0	26	0	8
Through Vol	59	226	0	65
RT Vol	20	0	76	0
Lane Flow Rate	92	293	88	85
Geometry Grp	2	7	7	2
Degree of Util (X)	0.121	0.405	0.106	0.116
Departure Headway (Hd)	4.751	4.979	4.31	4.93
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	754	724	832	727
Service Time	2.78	2.707	2.038	2.96
HCM Lane V/C Ratio	0.122	0.405	0.106	0.117
HCM Control Delay	8.4	11.1	7.6	8.6
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.4	2	0.4	0.4

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	0	27	225	0	0
Future Vol, veh/h	9	0	27	225	0	0
Conflicting Peds, #/hr	0	0	36	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	1080	872384	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	40	0	0	3	0	0
Mvmt Flow	10	0	31	262	0	0

Major/Minor	Minor2		Major1	
Conflicting Flow All	229	-	36	0
Stage 1	36	-	-	-
Stage 2	193	-	-	-
Critical Hdwy	7.6	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	6.6	-	-	-
Follow-up Hdwy	3.9	-	2.2	-
Pot Cap-1 Maneuver	643	0	1588	-
Stage 1	-	0	-	-
Stage 2	718	0	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	595	-	1544	-
Mov Cap-2 Maneuver	595	-	-	-
Stage 1	-	-	-	-
Stage 2	699	-	-	-

Approach	EB	NB
HCM Control Delay, s	11.2	0.9
HCM LOS	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1
Capacity (veh/h)	1544	-	595
HCM Lane V/C Ratio	0.02	-	0.018
HCM Control Delay (s)	7.4	0.1	11.2
HCM Lane LOS	A	A	B
HCM 95th %tile Q(veh)	0.1	-	0.1

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	63	319	0	0	12	0
Future Vol, veh/h	63	319	0	0	12	0
Conflicting Peds, #/hr	63	0	0	63	4	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	1080	852480	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	69	69	69	69	69	69
Heavy Vehicles, %	0	4	0	0	0	0
Mvmt Flow	91	462	0	0	17	0

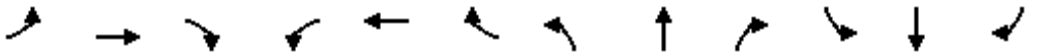
Major/Minor	Major1		Minor2	
Conflicting Flow All	63	0	480	-
Stage 1	-	-	63	-
Stage 2	-	-	417	-
Critical Hdwy	4.1	-	6.8	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.8	-
Follow-up Hdwy	2.2	-	3.5	-
Pot Cap-1 Maneuver	1553	-	520	0
Stage 1	-	-	-	0
Stage 2	-	-	639	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	1478	-	432	-
Mov Cap-2 Maneuver	-	-	432	-
Stage 1	-	-	-	-
Stage 2	-	-	608	-

Approach	EB	SB
HCM Control Delay, s	1.4	13.7
HCM LOS		B

Minor Lane/Major Mvmt	EBL	EBT	SBLn1
Capacity (veh/h)	1478	-	432
HCM Lane V/C Ratio	0.062	-	0.04
HCM Control Delay (s)	7.6	0.2	13.7
HCM Lane LOS	A	A	B
HCM 95th %tile Q(veh)	0.2	-	0.1

Capacity Analysis Summary Sheets

Projected Weekday Evening Peak Hour Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	25	87	38	171	0	0	0	0	212	23
Future Volume (vph)	0	0	25	87	38	171	0	0	0	0	212	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		45
Storage Lanes	0		1	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.91	0.87							0.67
Frt			0.865		0.877							0.850
Flt Protected				0.950								
Satd. Flow (prot)	0	0	1375	1745	1193	0	0	0	0	0	1749	1351
Flt Permitted				0.950								
Satd. Flow (perm)	0	0	1375	1589	1193	0	0	0	0	0	1749	899
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Satd. Flow (RTOR)			417	112	219							85
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		472			501			349			309	
Travel Time (s)		10.7			11.4			7.9			7.0	
Confl. Peds. (#/hr)	63		66	66		63	114					114
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	0%	4%	0%	0%	7%	0%	0%	0%	0%	5%	4%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)			0		0							0
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	32	112	268	0	0	0	0	0	272	29
Turn Type			Prot	pm+pt	NA						NA	Perm
Protected Phases			9	1 4!	6						4!	
Permitted Phases				6								4
Detector Phase			9	1 4	6						4	4
Switch Phase												
Minimum Initial (s)			4.0		4.0						4.0	4.0
Minimum Split (s)			9.0		25.0						25.0	25.0
Total Split (s)			30.0		25.0						35.0	35.0
Total Split (%)			33.3%		27.8%						38.9%	38.9%
Yellow Time (s)			4.0		4.0						4.0	4.0
All-Red Time (s)			1.0		1.0						1.0	1.0
Lost Time Adjust (s)			0.0		0.0						0.0	0.0
Total Lost Time (s)			5.0		5.0						5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode			Max		Max						Max	Max
Act Effct Green (s)			25.0	55.0	20.0						30.0	30.0
Actuated g/C Ratio			0.28	0.61	0.22						0.33	0.33

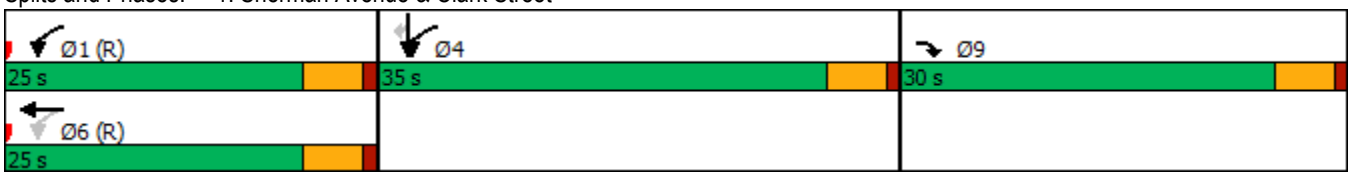
Lane Group	Ø1
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	9.0
Total Split (s)	25.0
Total Split (%)	28%
Yellow Time (s)	4.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio			0.05	0.10	0.62						0.47	0.08
Control Delay			0.1	1.7	14.3						26.9	0.4
Queue Delay			0.0	0.0	0.0						0.0	0.0
Total Delay			0.1	1.7	14.3						26.9	0.4
LOS			A	A	B						C	A
Approach Delay		0.1			10.6						24.4	
Approach LOS		A			B						C	
Queue Length 50th (ft)			0	0	23						121	0
Queue Length 95th (ft)			0	13	64						162	0
Internal Link Dist (ft)		392			421			269			229	
Turn Bay Length (ft)												45
Base Capacity (vph)			683	1109	435						583	356
Starvation Cap Reductn			0	0	0						0	0
Spillback Cap Reductn			0	0	0						0	0
Storage Cap Reductn			0	0	0						0	0
Reduced v/c Ratio			0.05	0.10	0.62						0.47	0.08

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 1:WBL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 15.9		Intersection LOS: B	
Intersection Capacity Utilization 38.3%		ICU Level of Service A	
Analysis Period (min) 15			

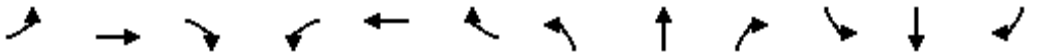
! Phase conflict between lane groups.

Splits and Phases: 1: Sherman Avenue & Clark Street



Lane Group	Ø1
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

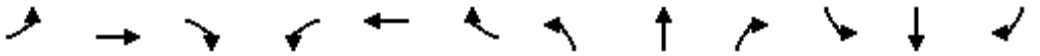


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	512	0	0	0	0	0	203	145	0	0	0
Future Volume (vph)	166	512	0	0	0	0	0	203	145	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	40		0	0		0	0		70	0		0
Storage Lanes	1		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98								0.94			
Frt									0.850			
Flt Protected	0.950											
Satd. Flow (prot)	1711	3188	0	0	0	0	0	3219	1531	0	0	0
Flt Permitted	0.950											
Satd. Flow (perm)	1669	3188	0	0	0	0	0	3219	1443	0	0	0
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	186								149			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		431			556			604			449	
Travel Time (s)		9.8			12.6			13.7			10.2	
Confl. Peds. (#/hr)	45		110	110		45	36		46	46		36
Confl. Bikes (#/hr)			37									
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	4%	0%	0%	0%	0%	0%	3%	2%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0			0			0	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	624	0	0	0	0	0	248	177	0	0	0
Turn Type	Perm	NA						NA	Perm			
Protected Phases		4						2				
Permitted Phases	4								2			
Detector Phase	4	4						2	2			
Switch Phase												
Minimum Initial (s)	4.0	4.0						4.0	4.0			
Minimum Split (s)	44.0	44.0						26.0	26.0			
Total Split (s)	44.0	44.0						26.0	26.0			
Total Split (%)	62.9%	62.9%						37.1%	37.1%			
Yellow Time (s)	4.0	4.0						4.0	4.0			
All-Red Time (s)	1.0	1.0						1.0	1.0			
Lost Time Adjust (s)	0.0	0.0						0.0	0.0			
Total Lost Time (s)	5.0	5.0						5.0	5.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max						Max	Max			
Act Effct Green (s)	39.0	39.0						21.0	21.0			
Actuated g/C Ratio	0.56	0.56						0.30	0.30			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.20	0.35						0.26	0.33			
Control Delay	2.2	9.2						19.5	7.1			
Queue Delay	0.0	0.0						0.0	0.0			
Total Delay	2.2	9.2						19.5	7.1			
LOS	A	A						B	A			
Approach Delay		7.5						14.3				
Approach LOS		A						B				
Queue Length 50th (ft)	3	71						42	9			
Queue Length 95th (ft)	22	90						63	41			
Internal Link Dist (ft)		351			476			524			369	
Turn Bay Length (ft)	40								70			
Base Capacity (vph)	1012	1776						965	537			
Starvation Cap Reductn	0	0						0	0			
Spillback Cap Reductn	0	0						0	0			
Storage Cap Reductn	0	0						0	0			
Reduced v/c Ratio	0.20	0.35						0.26	0.33			

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 70			
Control Type: Pretimed			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 9.8		Intersection LOS: A	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Orrington Avenue & Church Street



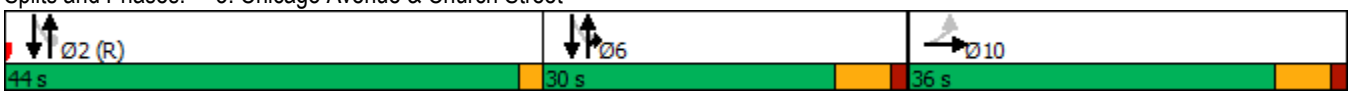
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	403	196	0	0	0	0	270	67	43	355	0
Future Volume (vph)	58	403	196	0	0	0	0	270	67	43	355	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.94									1.00	
Frt		0.955							0.850			
Flt Protected		0.996									0.995	
Satd. Flow (prot)	0	2891	0	0	0	0	0	1621	1516	0	1530	0
Flt Permitted		0.996									0.941	
Satd. Flow (perm)	0	2859	0	0	0	0	0	1621	1516	0	1446	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59							50			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		556			228			291			542	
Travel Time (s)		12.6			5.2			6.6			12.3	
Confl. Peds. (#/hr)	69		74	74		69	162		8	8		162
Confl. Bikes (#/hr)			3									
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	4%	3%	0%	0%	0%	0%	2%	3%	20%	6%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0						0			0	
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	714	0	0	0	0	0	293	73	0	433	0
Turn Type	Perm	NA						NA	custom	Perm	NA	
Protected Phases		10						2 6	6		2 6	
Permitted Phases	10									2 6		
Detector Phase	10	10						2 6	6	2 6	2 6	
Switch Phase												
Minimum Initial (s)	30.0	30.0							24.0			
Minimum Split (s)	36.0	36.0							30.0			
Total Split (s)	36.0	36.0							30.0			
Total Split (%)	32.7%	32.7%							27.3%			
Yellow Time (s)	4.5	4.5							4.5			
All-Red Time (s)	1.5	1.5							1.5			
Lost Time Adjust (s)		0.0							0.0			
Total Lost Time (s)		6.0							6.0			
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Max	Max							None			
Act Effct Green (s)		30.0						72.0	24.0		72.0	
Actuated g/C Ratio		0.27						0.65	0.22		0.65	

Lane Group	Ø2
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	2
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	42.0
Minimum Split (s)	44.0
Total Split (s)	44.0
Total Split (%)	40%
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.87						0.28	0.20		0.46	
Control Delay		47.5						8.8	16.4		11.3	
Queue Delay		0.0						0.0	0.0		0.0	
Total Delay		47.5						8.8	16.4		11.3	
LOS		D						A	B		B	
Approach Delay		47.5						10.3			11.3	
Approach LOS		D						B			B	
Queue Length 50th (ft)		234						79	13		137	
Queue Length 95th (ft)		#338						122	52		207	
Internal Link Dist (ft)		476			148			211			462	
Turn Bay Length (ft)									50			
Base Capacity (vph)		822						1061	369		946	
Starvation Cap Reductn		0						0	0		0	
Spillback Cap Reductn		0						0	0		0	
Storage Cap Reductn		0						0	0		0	
Reduced v/c Ratio		0.87						0.28	0.20		0.46	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 28.1		Intersection LOS: C	
Intersection Capacity Utilization 93.3%		ICU Level of Service F	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: Chicago Avenue & Church Street



Lane Group	Ø2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	0	0	0	0	0	397	0	86	160	0
Future Vol, veh/h	0	0	0	0	0	397	0	86	160	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	0	0	2	0	7	5	0
Mvmt Flow	0	0	0	0	0	436	0	95	176	0
Number of Lanes	0	0	0	0	0	1	0	1	1	0

Approach	WB	SE
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	WB
Conflicting Lanes Left	2	1
Conflicting Approach Right	SE	NB
Conflicting Lanes Right	1	2
HCM Control Delay	15.5	11.6
HCM LOS	C	B

Lane	NBLn1	NBLn2	WBLn1	SELn1
Vol Left, %	100%	0%	0%	100%
Vol Thru, %	0%	0%	0%	0%
Vol Right, %	0%	100%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	296	86	397	160
LT Vol	296	0	0	160
Through Vol	0	0	0	0
RT Vol	0	86	397	0
Lane Flow Rate	325	95	436	176
Geometry Grp	7	7	2	2
Degree of Util (X)	0.588	0.141	0.608	0.295
Departure Headway (Hd)	6.507	5.359	5.021	6.046
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	553	667	724	593
Service Time	4.255	3.106	3.021	4.104
HCM Lane V/C Ratio	0.588	0.142	0.602	0.297
HCM Control Delay	18.2	9	15.5	11.6
HCM Lane LOS	C	A	C	B
HCM 95th-tile Q	3.8	0.5	4.2	1.2

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	346	135	0	0	0	0	63	37	15	111	0
Future Vol, veh/h	40	346	135	0	0	0	0	63	37	15	111	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	0	1	1	0	0	0	0	1	0	0	0	0
Mvmt Flow	42	360	141	0	0	0	0	66	39	16	116	0
Number of Lanes	0	1	1	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	13	9.1	9.6
HCM LOS	B	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	0%	10%	0%	12%
Vol Thru, %	63%	90%	0%	88%
Vol Right, %	37%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	386	135	126
LT Vol	0	40	0	15
Through Vol	63	346	0	111
RT Vol	37	0	135	0
Lane Flow Rate	104	402	141	131
Geometry Grp	2	7	7	2
Degree of Util (X)	0.148	0.575	0.172	0.193
Departure Headway (Hd)	5.114	5.15	4.411	5.297
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	698	700	809	675
Service Time	3.172	2.902	2.163	3.353
HCM Lane V/C Ratio	0.149	0.574	0.174	0.194
HCM Control Delay	9.1	14.7	8.1	9.6
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.5	3.7	0.6	0.7

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	0	5	364	0	0
Future Vol, veh/h	18	0	5	364	0	0
Conflicting Peds, #/hr	73	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	1080	872384	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	2	0	0
Mvmt Flow	20	0	5	400	0	0

Major/Minor	Minor2		Major1	
Conflicting Flow All	283	-	0	0
Stage 1	0	-	-	-
Stage 2	283	-	-	-
Critical Hdwy	6.8	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-
Follow-up Hdwy	3.5	-	2.2	-
Pot Cap-1 Maneuver	689	0	-	-
Stage 1	-	0	-	-
Stage 2	746	0	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	689	-	-	-
Mov Cap-2 Maneuver	689	-	-	-
Stage 1	-	-	-	-
Stage 2	746	-	-	-

Approach	EB	NB
HCM Control Delay, s	10.4	
HCM LOS	B	

Minor Lane/Major Mvmt	NBL	NBT	EBLn1
Capacity (veh/h)	-	-	689
HCM Lane V/C Ratio	-	-	0.029
HCM Control Delay (s)	-	-	10.4
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	26	487	0	0	60	0
Future Vol, veh/h	26	487	0	0	60	0
Conflicting Peds, #/hr	105	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	1080	852480	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	27	507	0	0	63	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	105	0	414	-
Stage 1	-	-	105	-
Stage 2	-	-	309	-
Critical Hdwy	4.1	-	6.8	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.8	-
Follow-up Hdwy	2.2	-	3.5	-
Pot Cap-1 Maneuver	1499	-	572	0
Stage 1	-	-	-	0
Stage 2	-	-	724	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	1379	-	471	-
Mov Cap-2 Maneuver	-	-	471	-
Stage 1	-	-	-	-
Stage 2	-	-	666	-

Approach	EB	SB
HCM Control Delay, s	0.5	13.8
HCM LOS		B

Minor Lane/Major Mvmt	EBL	EBT	SBLn1
Capacity (veh/h)	1379	-	471
HCM Lane V/C Ratio	0.02	-	0.133
HCM Control Delay (s)	7.7	0.1	13.8
HCM Lane LOS	A	A	B
HCM 95th %tile Q(veh)	0.1	-	0.5

AutoTURN Exhibits

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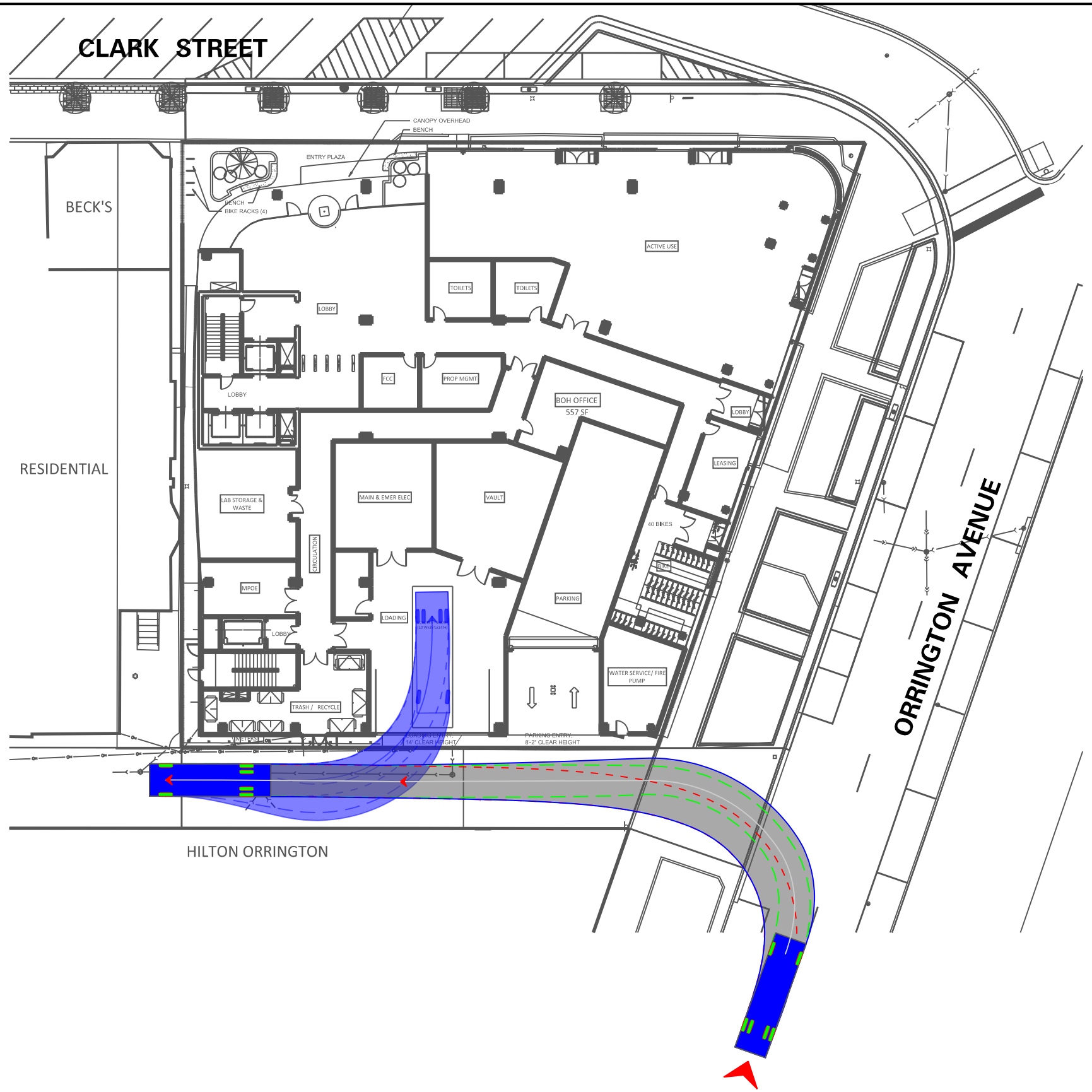
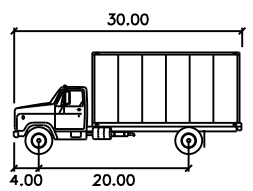


SCALE: 1" = 30'

DESIGN VEHICLE



SU-30	Feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.00
Steering Angle	: 31.8

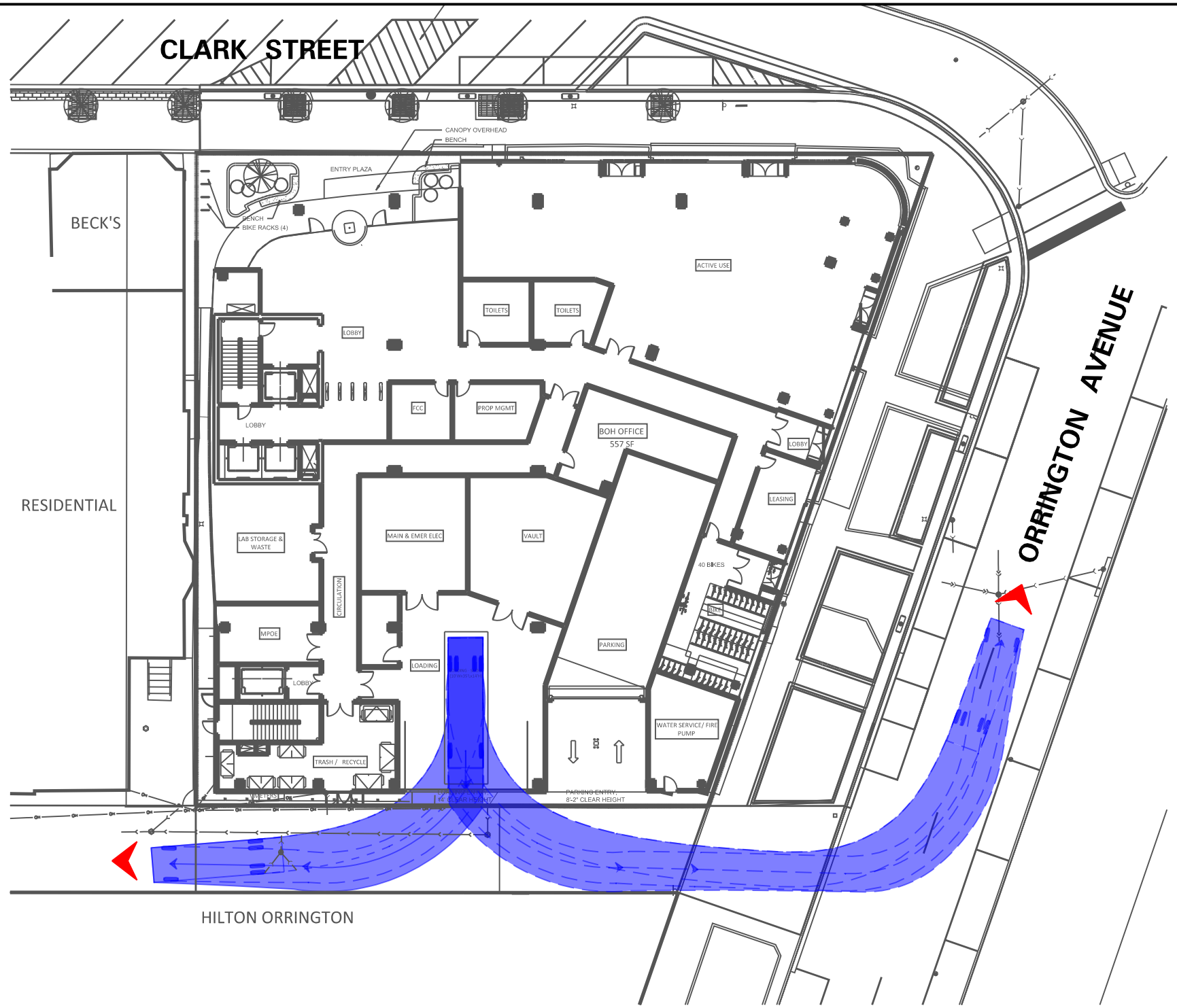
Body of Vehicle -
Front Tires Path -
Rear Tires Path -

OFFICE BUILDING DEVELOPMENT
EVANSTON, ILLINOIS

SINGLE UNIT TRUCK INBOUND MANEUVERS

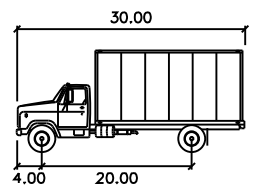
DRAWN: MD CHECKED: LA
DATE: 10-11-21 REV: 11-03-21
PROJECT # 21-195
EXHIBIT: A1

KLOA Kenig,Lindgren,O'Hara,Aboona,Inc.



SCALE: 1" = 30'

DESIGN VEHICLE



SU-30	Feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.00
Steering Angle	: 31.8

Body of Vehicle -
Front Tires Path -
Rear Tires Path -

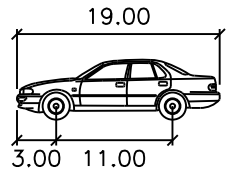
OFFICE BUILDING DEVELOPMENT EVANSTON, ILLINOIS

SINGLE UNIT TRUCK OUTBOUND MANEUVERS

DRAWN: MD CHECKED: LA
DATE: 10-11-21 REV: 11-03-21
PROJECT # 21-195
EXHIBIT: A2

KLOA Kenig,Lindgren,O'Hara,Aboona,Inc.

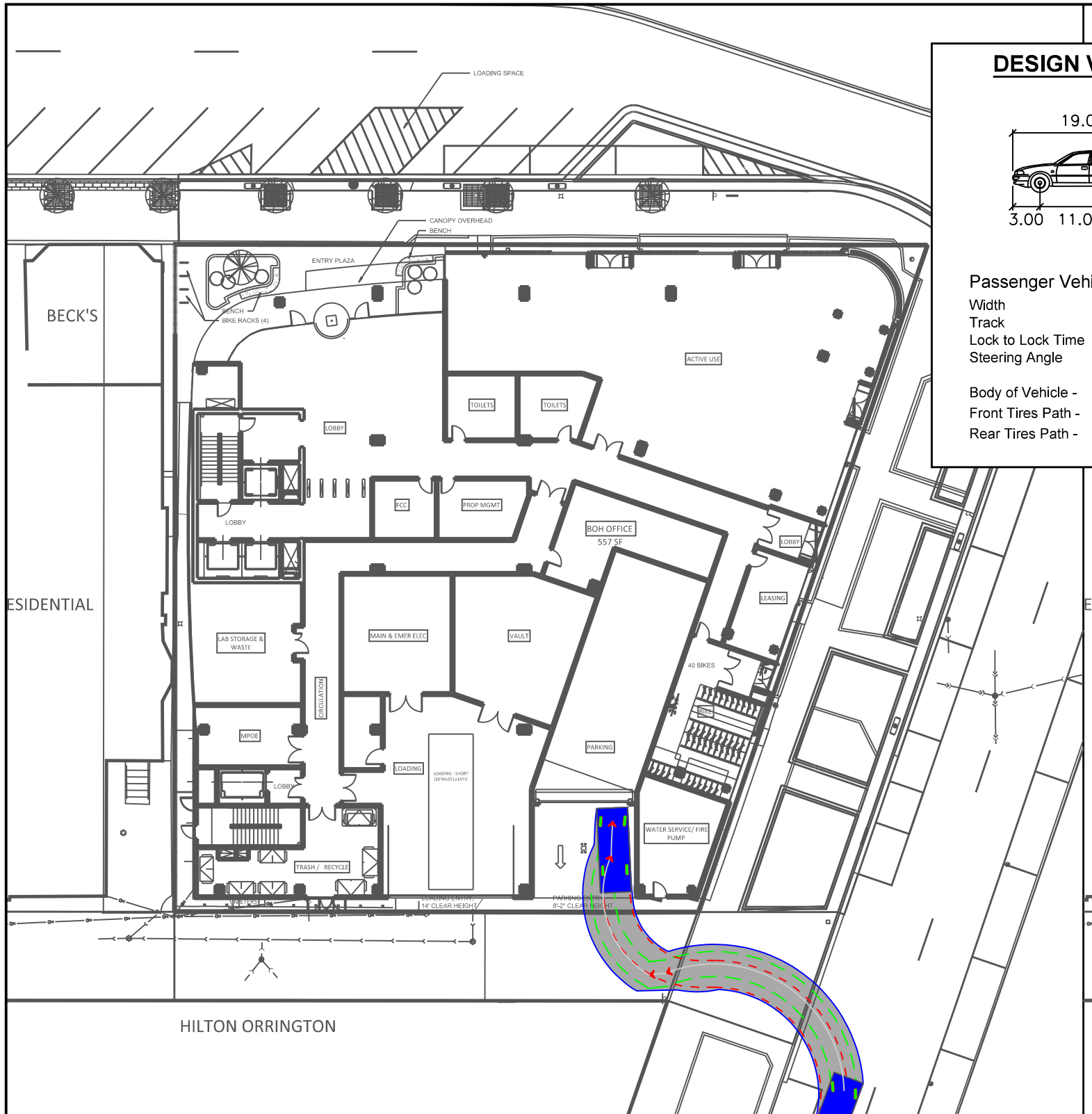
DESIGN VEHICLE



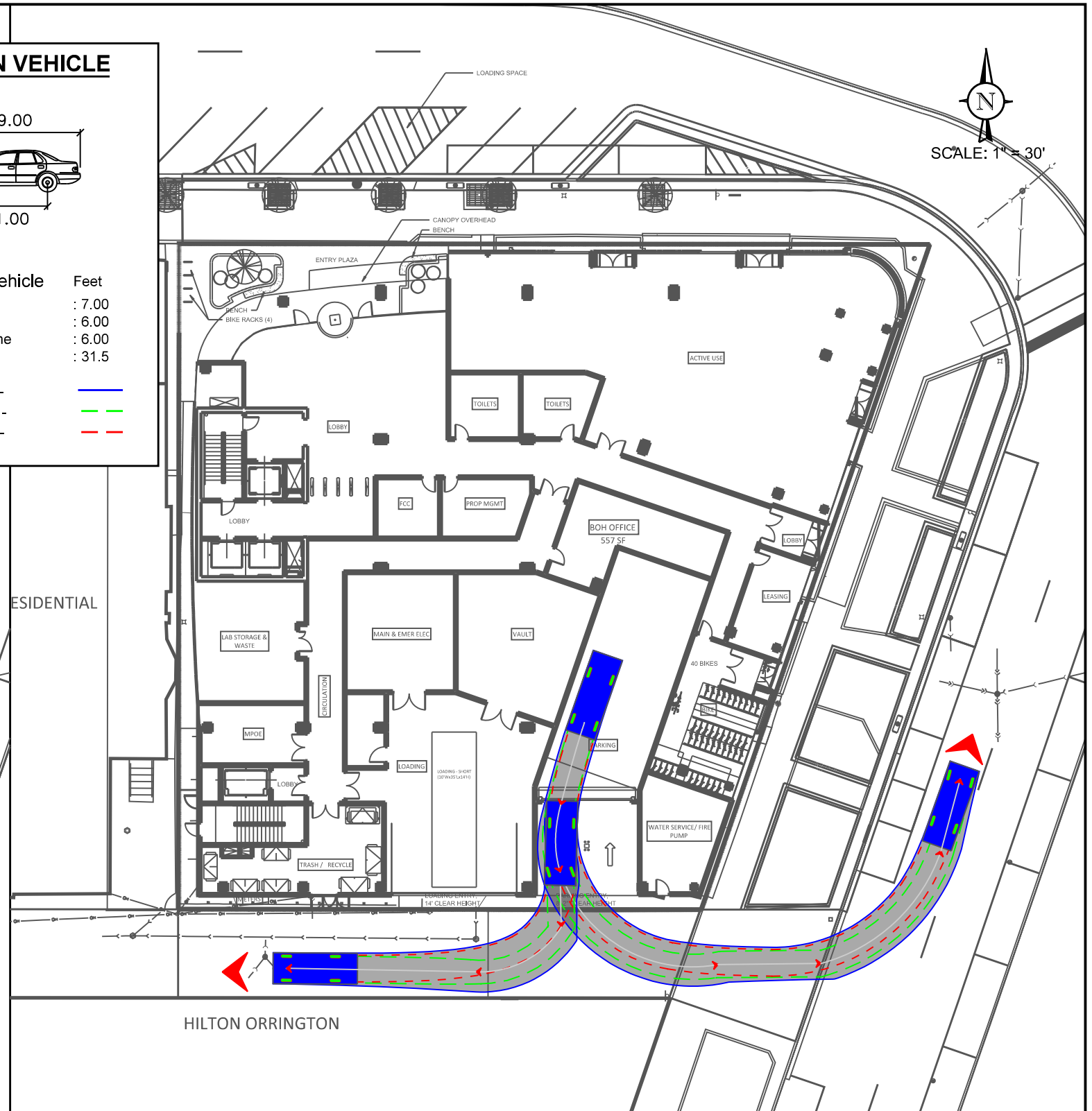
Passenger Vehicle	Feet
Width	: 7.00
Track	: 6.00
Lock to Lock Time	: 6.00
Steering Angle	: 31.5

Body of Vehicle -
Front Tires Path -
Rear Tires Path -

SCALE: 1" = 30'



INBOUND



OUTBOUND

OFFICE BUILDING DEVELOPMENT
EVANSTON, ILLINOIS

PASSENGER VEHICLE MANEUVERS

DRAWN: MD CHECKED: LA
DATE: 10-11-21 REV: 11-03-21
PROJECT # 21-195
EXHIBIT: B

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.