

Project name: Mountain Line DCC

To: City of Flagstaff Planning Department

From:
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Date: Oct 14, 2021

Memo

Subject: Mountain Line DCC Parking Demand Study

Background

On behalf of Mountain Line, AECOM has conducted this parking demand study for the proposed Downtown Connection Center (DCC) building that will be located north of Phoenix Avenue and east of Milton Road in Flagstaff, Arizona. The project is proposed to be implemented in phases, as defined below:

- **Phase 1:** the proposed DCC building, surrounding infrastructure and public spaces adjacent to the building, and is located on the westernmost parcel, APN 10043003B. It is anticipated the existing parking and transit operations would remain on parcel APN 10044005A.
- **Phase 2:** area pending construction and phasing of the RDF project through this site. Phase 2 can be considered in two steps, as described below:
 - o **Phase 2a:** bus bays and civic space to be completed by Mountain Line
 - o **Phase 2b:** additional surface parking on site constructed by the city,

The approximately 21,616 square foot building will house Mountain Line employees, provide a break room for bus operators, offer public space for transit patrons, provide meeting rooms and office space for other agencies. The purpose of this parking study is to provide justification for a reduction in required parking.

Proposed Conditions

The proposed two-story building is currently estimated to be approximately 21,616 sq feet gross floor area (GFA) and is proposed to be constructed in Phase 1. The main components of the building, their size and the anticipated number of full-time equivalent employees are shown in Table 1. The proposed site is currently planned to provide 5 off-street parking stalls in Phase 1, and retain existing parking on the eastern portion of the site. In Phase 2, new kiss and ride/loading/unloading zone on the north side of

Phoenix Avenue would be provided in Phase 2a and additional parking would be provided in Phase 2b. Phase 2a also accommodates tour buses in the kiss and ride area. See Appendix A for the proposed concept plan.

Mountain Line bus drivers will have access to the building and will use the space as a break room. Bus drivers will not generate a need for vehicle parking as employee parking for bus drivers will be provided at the Kaspar Drive Facility where they will continue to report for duty. The DCC site will not operate as a park-and-ride facility, so no transit patron parking will be provided. Park-and-rides typically are located outside a central area bringing people in, not vice versa. As the office space in the building is primarily Mountain Line staff, Mountain Line will employ travel demand strategies to reduce or eliminate staff parking needs. All building users are anticipated to arrive by bus, bike, walking, or kiss and ride.

If we analyze the DCC without the bus operations component, public space, and community space components, the space for office use is anticipated to be approximately 7,510 square feet. Parking requirements for this space is estimated in the subsequent sections.

Table 1. Anticipated Building Use

Use	Approximate Floor Area (sq ft)	Anticipated Employees (FTE)
Admin Space (Mountain Line Offices)	5,670	25
Flagstaff PD	300	1
MetroPlan and Human Services (Office Space)	1,540	3
Total	7,510	29

City Parking Requirements

According to the City of Flagstaff’s Zoning Code (Table 10-50.80.040.A) a development with this square footage would be required to have 25 parking stalls, as shown in Table 2. A 10% reduction is assumed based on the building’s proximity to permanent transit (10-50.80.060 A), a 5% reduction is assumed based on the building providing bicycle parking (10-50.80.060 F), and a 30% reduction for parking demand management (10-50.80.060 C).

Table 2. City Code Parking Requirements

Land Use	Code Required Parking	Detailed GSF*	Number of Required Spaces
Offices: General (Admin Space, Flagstaff PD, MetroPlan, Human Services)	1 per 300 GSF	7,510	25
Sub Total			25
Proximity to transit Reduction (10%)			-3
Bike Parking Reduction (5%)			-1
Sub Total			21
Employee TDM Program Reduction (30%)			-6
Total			15

Parking Demand

Parking demand was estimated using parking rates obtained from the most recent edition of Institute of Transportation Engineers (ITE) *Parking Generation Manual*, 5th Edition (2019). Several relevant land use codes include:

- General Office (710)
- Small Office (712)
- Single Tenant Office (715)

Parking demand estimates are provided based on square footage and the number of employees. Average rates for office land use in urban/suburban areas range between 2.4 and 3.1 parked vehicles per 1,000 square feet and between 0.78 and 1.33 parked vehicles per employee. Lower average rates are reported for office uses in more dense/multi-use locations as shared parking reduces parking demand. These reduced rates range from 1.63 to 2.43 parked cars per 1,000 square feet and between 0.58 and 0.75 parked cars per employee.

Based on these rates, the anticipated average peak parking demand for this use would be between **12 and 39 vehicles**. See Appendix B for ITE parking demand rates and calculations.

These estimates do not account for parking demand associated with any events in the community space. Supplying parking for occasional larger events is not recommended. Public transit use or the use of other public parking should be encouraged for these types of events.

Travel and Parking Demand Strategies

Pursuant to City of Flagstaff Zoning Code 10-50.80.060 C and D, required elements justifying the parking reduction are provided below:

Single User/Owner

Although the building will have multiple users, there will be one primary owner which provides long-term ability to control parking demand. The other tenants are government or quasi government entities with incentive to meet the needed parking restrictions. As a note, MetroPlan employees are “on-loan” from Mountain Line and subject to the Mountain Line all Mountain Line policies including parking management strategies.

Parking Management Strategies

As a transit agency, the primary occupant of the building, Mountain Line, is committed to promoting alternative forms of transportation for its employees. As such the following programs and infrastructure have been proposed to reduce the demand for off-street parking (see also “Employee and Visitor Transportation Demand Management Program for the New Mountain Line Downtown Connection Center” in Appendix C):

- Transit:
 - Transit Passes – Mountain Line will provide free transit passes to all employees and their immediate family as well as one non-family member of their choosing. Mountain Line also offers a guaranteed ride home program.

- Proximity to Transit – The office is located directly adjacent to the DCC bus stops which will provide multiple transit options to employees (the current Mountain Line office space at the Kaspar Drive Facility is only served by two transit lines).
- Park and Ride – The Kaspar facility will serve as an east side park and ride facility for employees providing direct connection to the DCC every 20 minutes via Route 2. Staff may count time commuting between facilities as paid time. Mountain Line will also establish a west side park and ride.
- Bike Amenities:
 - Bike Parking – Bike parking will be provided on-site.
 - Bike Reimbursement – Bike reimbursement program for employees committed to commuting at least 50% by bike.
 - Shared Bikes – Mountain Line will provide bikes/e-bikes/scooters on site for check-out for midday trips and for commuting.
- Bike/Pedestrian Infrastructure – The proposed building is located near multiple bicycle and pedestrian facilities, including sidewalks and a well-connected grid network, a railroad crossing and signalized crossing of US 66 to downtown Flagstaff. Additionally, there are several planned bicycle and pedestrian facilities, including a proposed signalized crossing at Milton Road to connect to La Plaza Vieja, connectivity to the Flagstaff Urban Trails System (FUTS), and bike lanes on Beaver Street and Butler Avenue.
- Teleworking/Flexible Schedules – Teleworking is available for staff.

Long-term Outlook

The building is located next to a proposed permanent bus facility. Changing the building's future use to anything other than the DCC facility would likely require the removal of the bus bays, therefore freeing up space for parking. Therefore, risk of long-term changes to land use and parking demand are minimal.

Additionally, approximately 106 future parking spaces as part of Phase 2b will be built by the City of Flagstaff to the north of the bus plaza area, and the existing 24 car parking lot along Beaver will remain. The new parking area to the north of the bus plaza will be built by the City and managed by ParkFLG. Although none of the spaces will be designated for DCC building users, the users will pay to utilize this parking area when accessing the building.

Key Findings

The following key findings are made regarding parking for the proposed project:

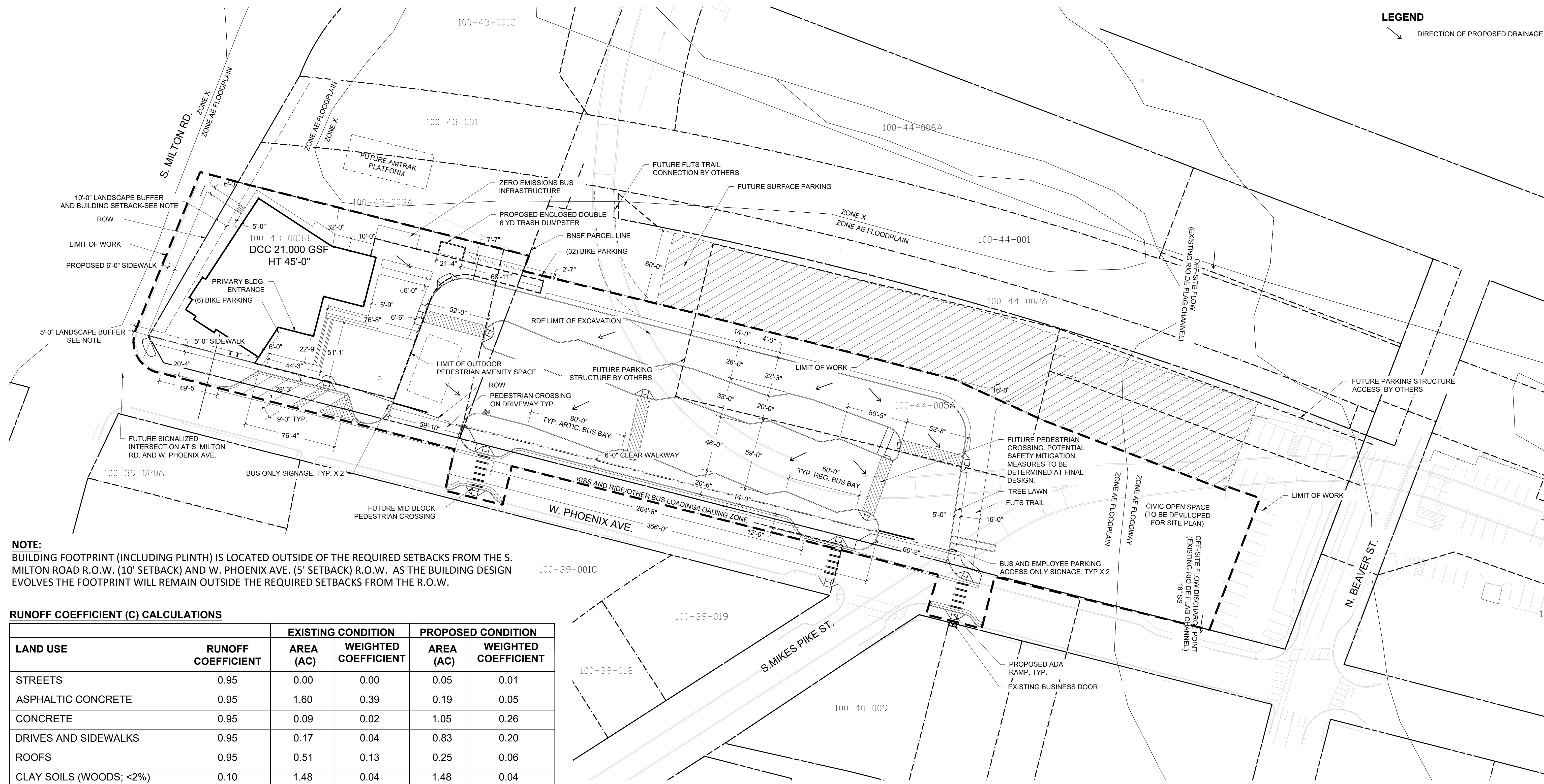
- The proposed 21,616 square foot building will provide 5 off-street parking stalls.
- City code requires 25 parking stalls. However, with allowable reductions per city code are permitted, 15 are required.
- A significant parking reduction is requested based on parking management strategies—particularly the fact that the primary user is Mountain Line which can provide travel demand management strategies to its employees.
- A future parking lot, estimated at 106 parking spaces, will be built by the City of Flagstaff and managed by ParkFLG and DCC building users will have to pay to park in this lot.

Requested Action

Mountain Line acknowledges the City codes identifies a need for 15 parking spaces, though that reduction is subject to the approval of City Council. However, Mountain Line would like to propose that any requirement for dedicated parking for Mountain Line be waived entirely to serve a higher public interest in maximizing public parking. Mountain Line proposes making all space available for parking public and under the purview of ParkFlag. Mountain Line would require employees to pay ParkFlag to park onsite. Using rough costs, if a parking space costs \$4,000 to build and employee parks in a space 2000 hours a year, Mountain Line would essentially be reimbursing ParkFlag for those spaces in a 2 year timeframe. In addition, ParkFlag would be generating additional revenue off those spaces in evenings, on weekend and beyond the first two years. Mountain Line believes this this scenario serves the highest community good by prioritizing all available space for public parking over dedicated Mountain Line parking.

APPENDIX A: Site Plan

LEGEND
 ↘ DIRECTION OF PROPOSED DRAINAGE



NOTE:
 BUILDING FOOTPRINT (INCLUDING PLINTH) IS LOCATED OUTSIDE OF THE REQUIRED SETBACKS FROM THE S. MILTON ROAD R.O.W. (10' SETBACK) AND W. PHOENIX AVE. (5' SETBACK) R.O.W. AS THE BUILDING DESIGN EVOLVES THE FOOTPRINT WILL REMAIN OUTSIDE THE REQUIRED SETBACKS FROM THE R.O.W.

RUNOFF COEFFICIENT (C) CALCULATIONS

LAND USE	RUNOFF COEFFICIENT	EXISTING CONDITION		PROPOSED CONDITION	
		AREA (AC)	WEIGHTED COEFFICIENT	AREA (AC)	WEIGHTED COEFFICIENT
STREETS	0.95	0.00	0.00	0.05	0.01
ASPHALTIC CONCRETE	0.95	1.60	0.39	0.19	0.05
CONCRETE	0.95	0.09	0.02	1.05	0.26
DRIVES AND SIDEWALKS	0.95	0.17	0.04	0.83	0.20
ROOFS	0.95	0.51	0.13	0.25	0.06
CLAY SOILS (WOODS; <2%)	0.10	1.48	0.04	1.48	0.04
TOTALS		3.85	0.62	3.85	0.62

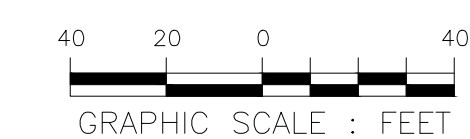
FAR CALCULATIONS

APN/PARCEL SIZE	BUILDING GFA	FAR
APN10043003B 39,639.6 SF	21,616 SF	0.545 (21,616 GFA / 39639.6 BUILDABLE AREA)
SITE SIZE	BUILDING GFA	FAR
174,000 SF	21,616 SF	0.124 (21,616 GFA / 174,000 BUILDABLE AREA)

OUTDOOR AMENITY SPACE CALCULATION

DEVELOPMENT SITE AREA	REQUIRED OUTDOOR PEDESTRIAN AMENITY SPACE (5%)	PROVIDED OUTDOOR PEDESTRIAN AMENITY SPACE
174,000 SF	8,700 SF	10,767.0 SF

CODE SECTION 10-50.80.050 BICYCLE PARKING	SPACES REQUIRED	SPACES PROVIDED
TWO BICYCLE PARKING SPACES, OR FIVE PERCENT OF REQUIRED OFF-STREET PARKING SPACES, WHICHEVER IS GREATER.	4 (BASED ON 21,000 GFA BUILDING SIZE)	38



SITE PLAN

13-Oct-2021	14:17	Blasada, Kenneth	DWG File: C:\Users\kenneth.blasada\AECOM\NAIPTA DCC - General\DCC Concept Plan\10_12_2021\0595394_DCC_Concept_Plan.dwg
REV	DATE	DESCRIPTION	Submitted:
			Seal:
			Consultant:
			Client:
			Designed By:
			Drawn By:
			Checked By:
			Approved By:
		CONCEPT PLAN	PRELIMINARY NOT FOR CONSTRUCTION
		 7720 North 16th Street Suite 100 Phoenix, AZ 85020 Phone: (602) 371-1100	
		 Northern Arizona Intergovernmental Public Transportation Authority	
		 MOUNTAIN LINE	
		NAIPTA DOWNTOWN CONNECTION CENTER 216 W. PHOENIX AVENUE, FLAGSTAFF, AZ 86001 ASSESSOR'S PARCEL NUMBER (APN): 1004405A, 10043003B, 10043001D PROPERTY OWNER: BRYCE DOTY, CITY OF FLAGSTAFF, (928) 637-8384 DEVELOPER: KATE MORLEY, MOUNTAIN LINE, (928) 679-8903 PREPARER: JENNIFER LOVE, AECOM, (602) 648-2423	
		@ 24X36 CADD Filename: 60595394_DCC_Concept_Plan.dwg Submission Date: 10/13/2021 Contract No.: TBD Sheet No.: 6	

APPENDIX B: Parking Demand Calculations

		Rates				Proposed Site		Parking Generation			
		General Suburban		Dense Multi-use Urban				General Suburban		Dense Multi-use Urban	
Use	ITE LU Code	Sq Ft	Employees	Sq Ft	Employees	Sq Ft	Employees	Sq Ft	Employees	Sq Ft	Employees
General Office	710	2.39	0.84	1.63	0.58	12,607	29	30	24	21	17
Small Office	712	2.56	1.33	--	--	12,607	29	32	39	--	--
Single Tenant	715	3.1	0.78	2.43	0.75	12,607	29	39	23	31	22

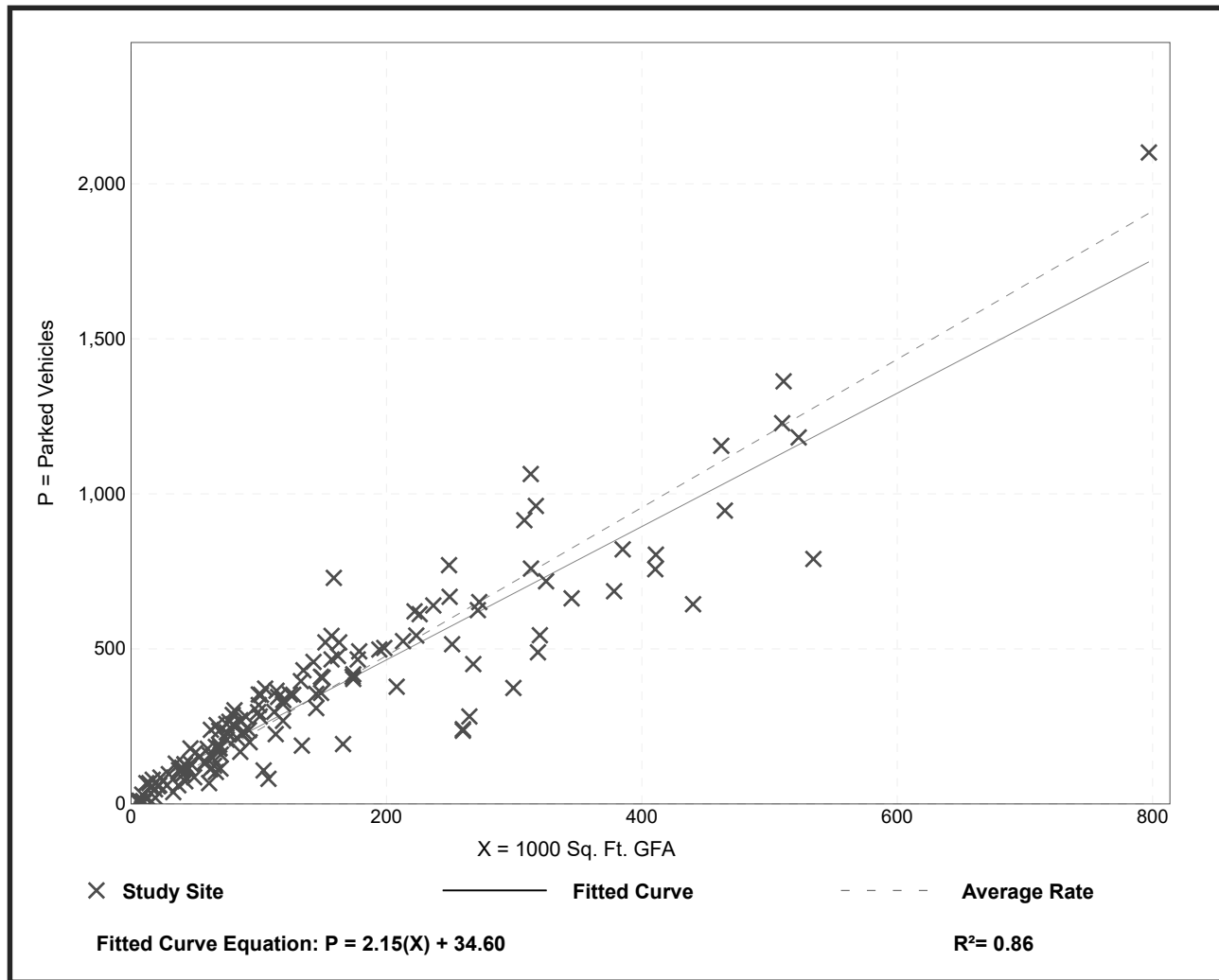
General Office Building (710)

Peak Period Parking Demand vs: 1000 Sq. Ft. GFA
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban
Peak Period of Parking Demand: 9:00 a.m. - 3:00 p.m.
 Number of Studies: 148
 Avg. 1000 Sq. Ft. GFA: 145

Peak Period Parking Demand per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
2.39	0.50 - 5.58	2.30 / 3.30	2.28 - 2.50	0.69 (29%)

Data Plot and Equation



Parking Generation Manual, 5th Edition • Institute of Transportation Engineers

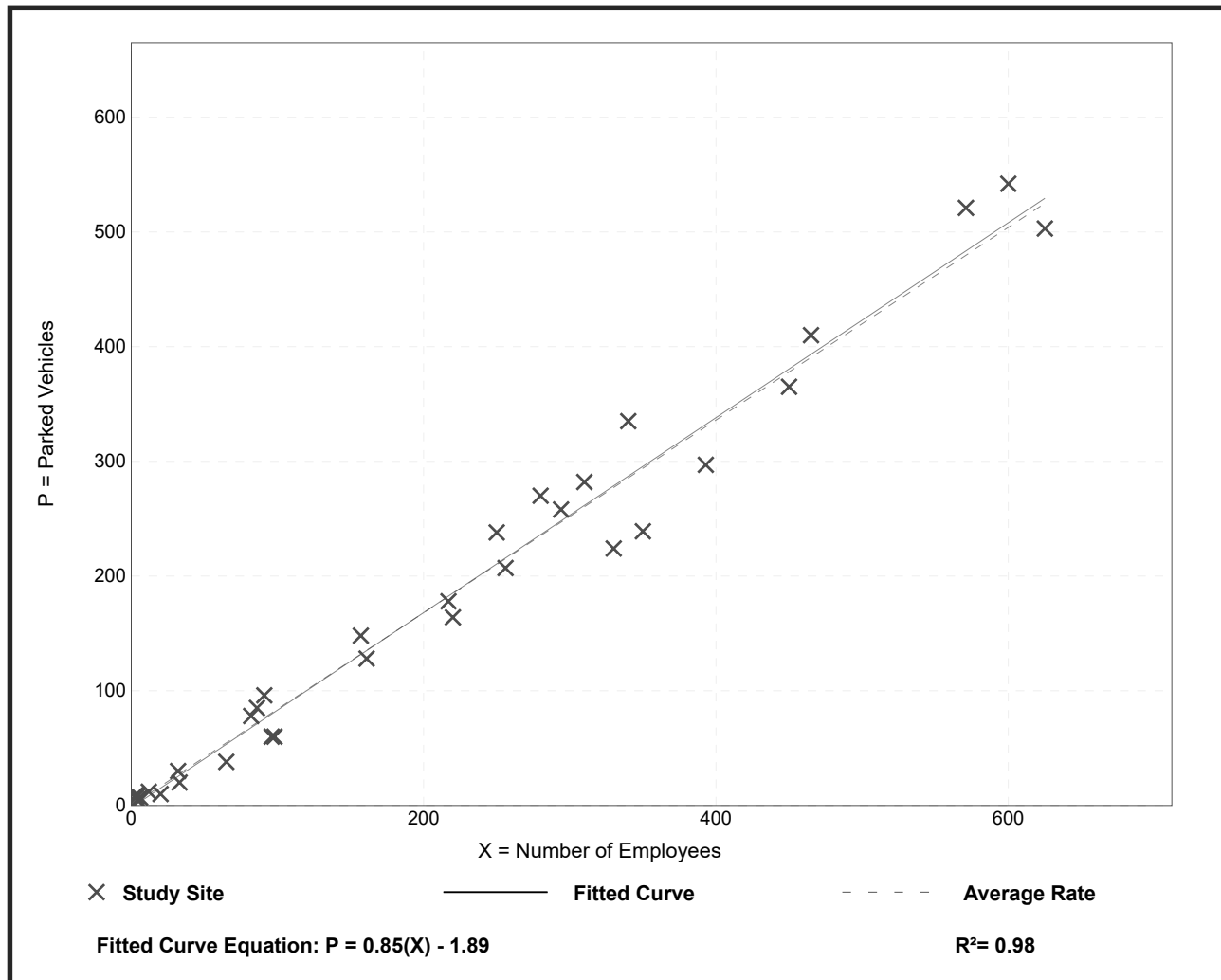
General Office Building (710)

Peak Period Parking Demand vs: Employees
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban
Peak Period of Parking Demand: 9:00 a.m. - 3:00 p.m.
 Number of Studies: 33
 Avg. Num. of Employees: 209

Peak Period Parking Demand per Employee

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.84	0.50 - 3.00	0.80 / 1.05	0.80 - 0.88	0.12 (14%)

Data Plot and Equation



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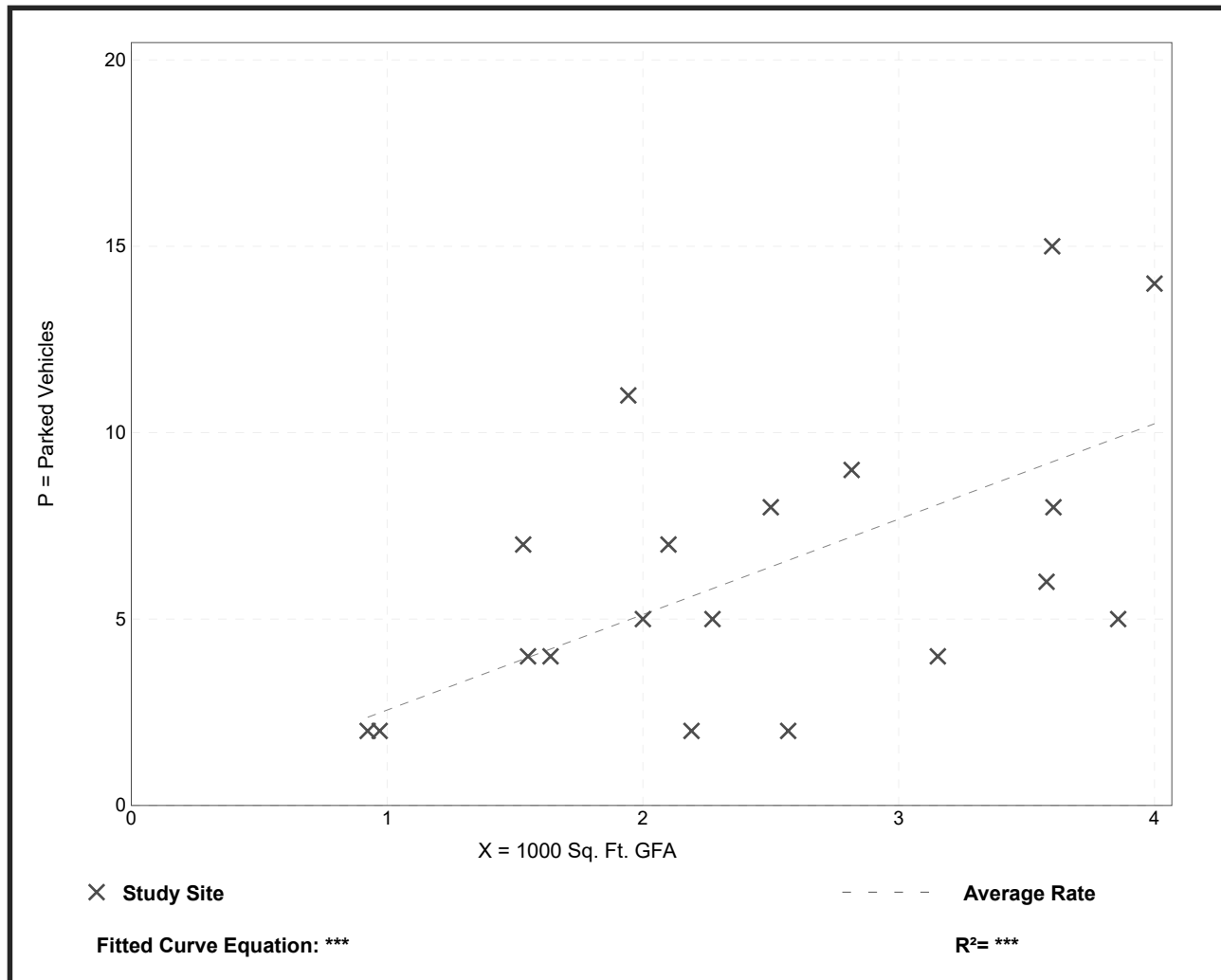
Small Office Building (712)

Peak Period Parking Demand vs: 1000 Sq. Ft. GFA
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban
Peak Period of Parking Demand: 10:00 a.m. - 5:00 p.m.
 Number of Studies: 19
 Avg. 1000 Sq. Ft. GFA: 2.4

Peak Period Parking Demand per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
2.56	0.78 - 5.66	2.12 / 4.17	***	1.26 (49%)

Data Plot and Equation



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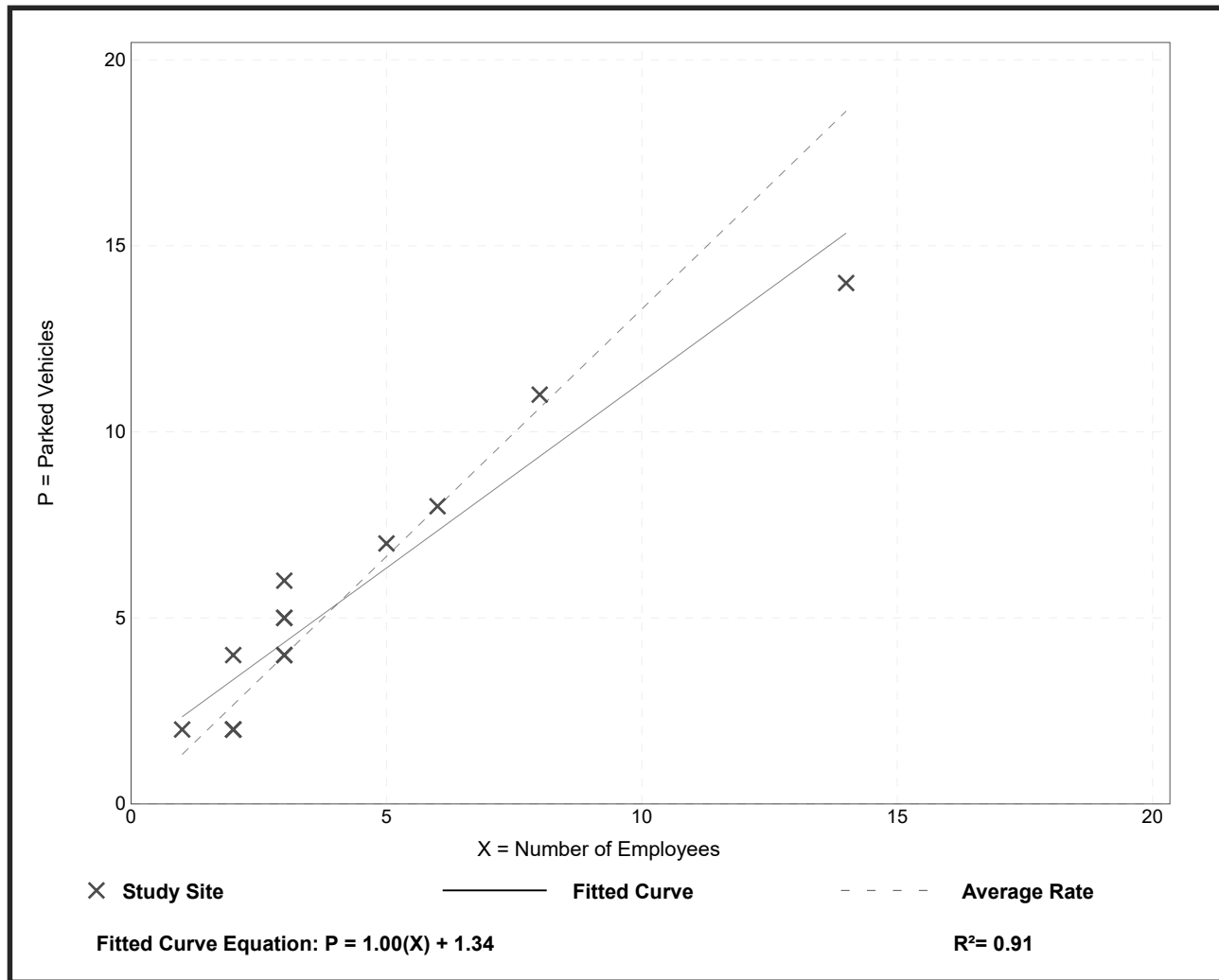
Small Office Building (712)

Peak Period Parking Demand vs: Employees
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban
Peak Period of Parking Demand: 10:00 a.m. - 5:00 p.m.
 Number of Studies: 14
 Avg. Num. of Employees: 4.0

Peak Period Parking Demand per Employee

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.33	1.00 - 2.00	1.32 / 2.00	***	0.33 (25%)

Data Plot and Equation



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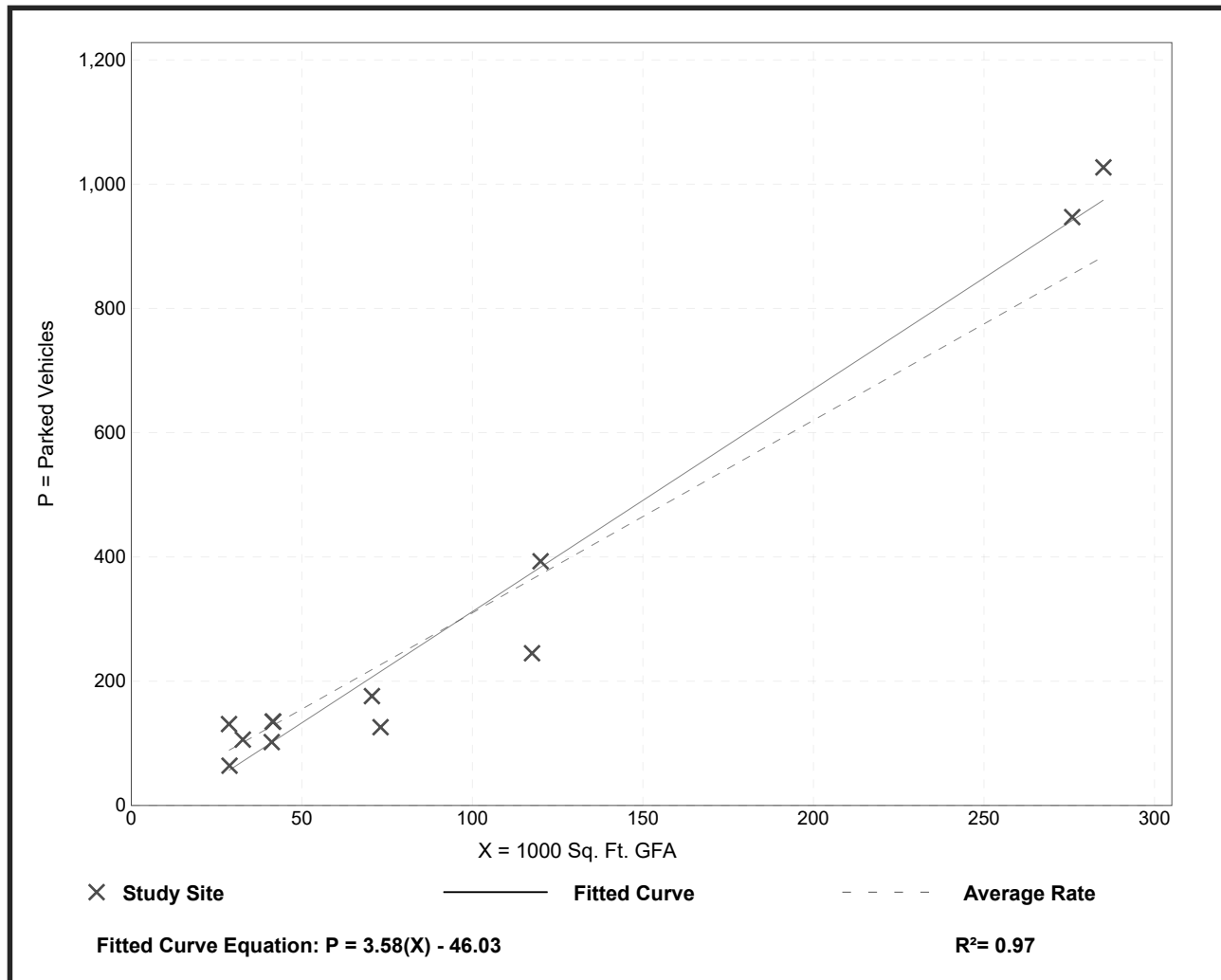
Single Tenant Office Building (715)

Peak Period Parking Demand vs: 1000 Sq. Ft. GFA
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban
Peak Period of Parking Demand: 10:00 a.m. - 4:00 p.m.
 Number of Studies: 12
 Avg. 1000 Sq. Ft. GFA: 96

Peak Period Parking Demand per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
3.10	1.72 - 4.57	2.48 / 3.65	***	0.68 (22%)

Data Plot and Equation



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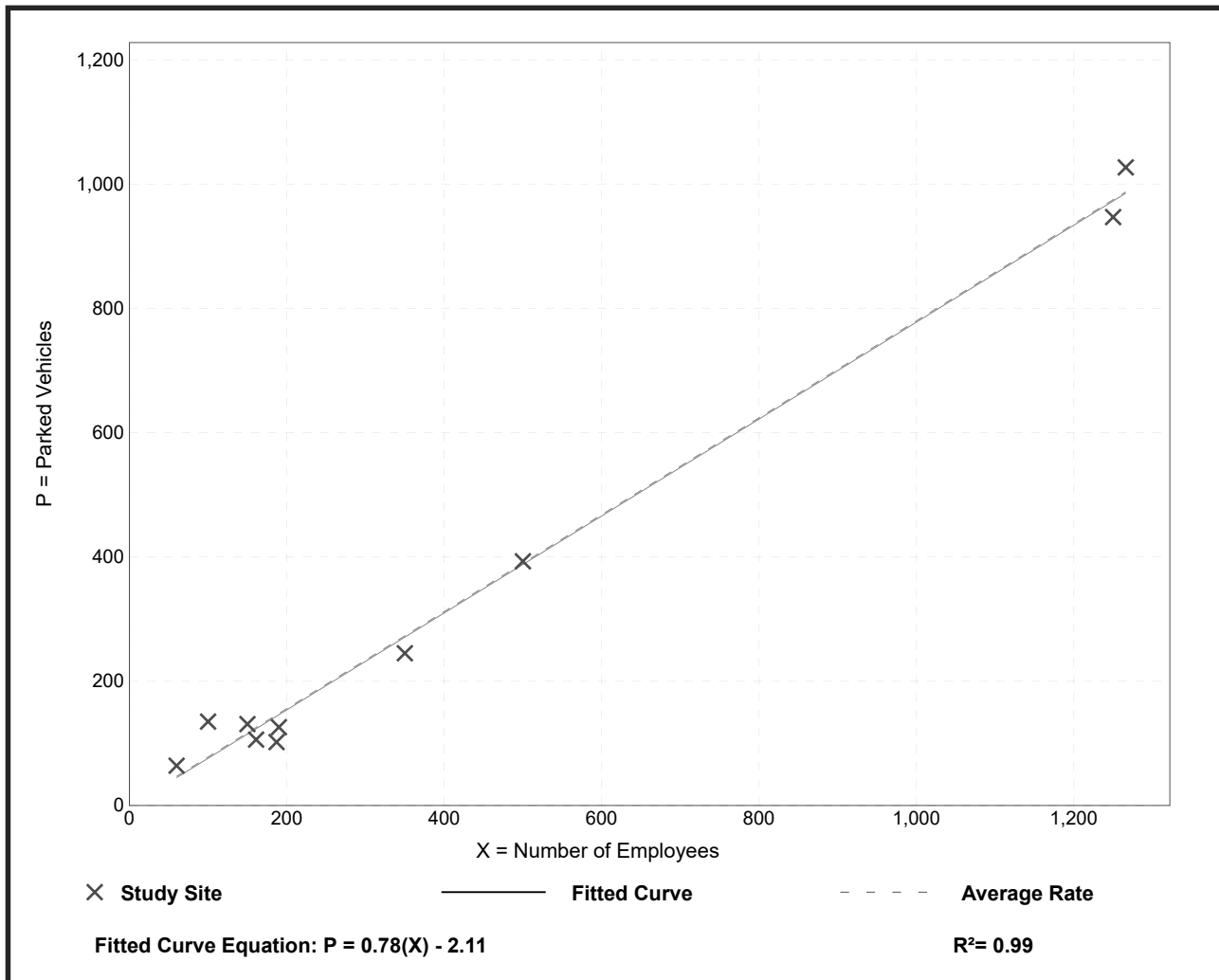
Single Tenant Office Building (715)

Peak Period Parking Demand vs: Employees
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban
Peak Period of Parking Demand: 10:00 a.m. - 4:00 p.m.
 Number of Studies: 10
 Avg. Num. of Employees: 421

Peak Period Parking Demand per Employee

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.78	0.55 - 1.35	0.69 / 1.17	***	0.12 (15%)

Data Plot and Equation



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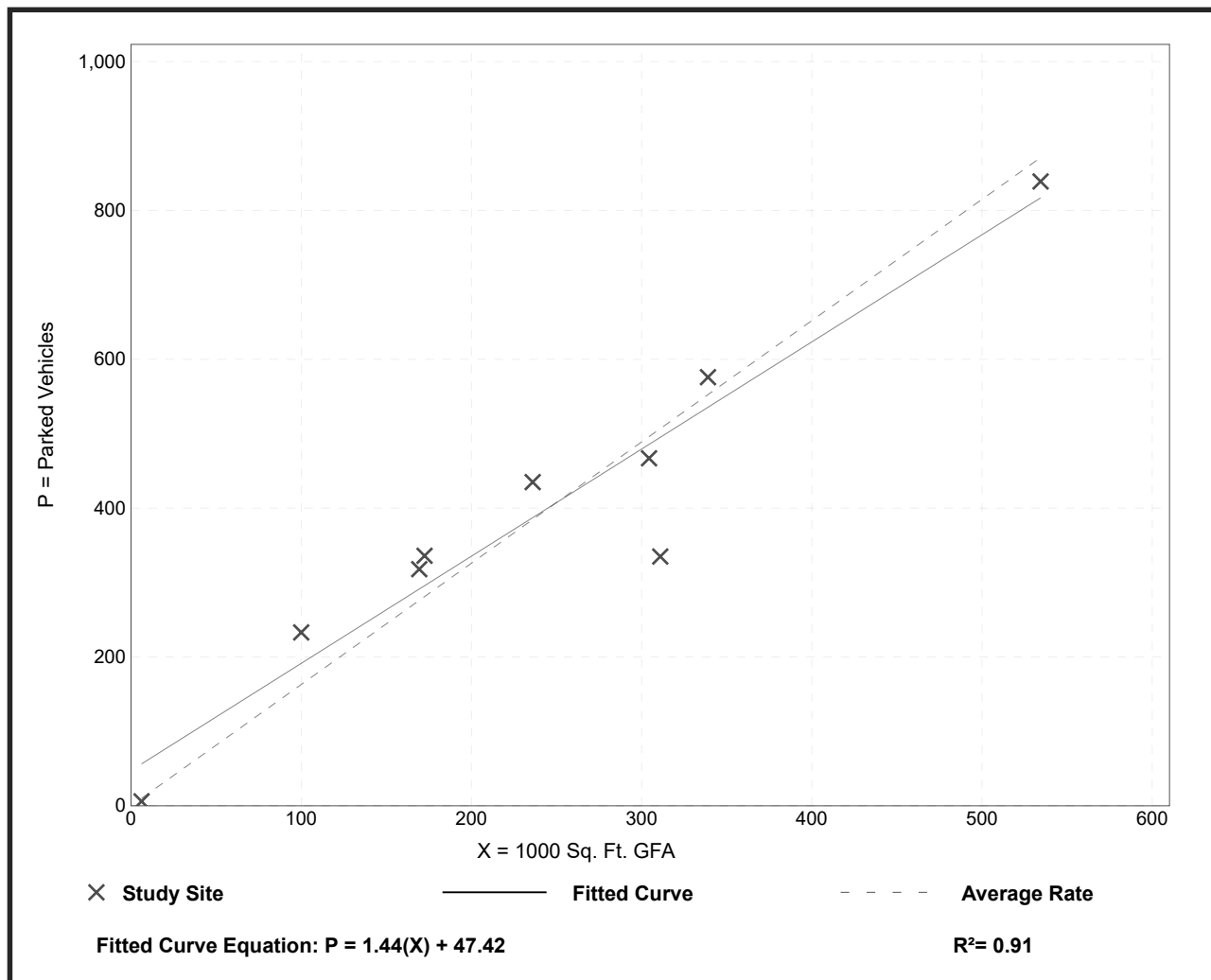
General Office Building (710)

Peak Period Parking Demand vs: 1000 Sq. Ft. GFA
On a: Weekday (Monday - Friday)
Setting/Location: Dense Multi-Use Urban
Peak Period of Parking Demand: 9:00 a.m. - 4:00 p.m.
 Number of Studies: 9
 Avg. 1000 Sq. Ft. GFA: 241

Peak Period Parking Demand per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.63	0.97 - 2.33	1.55 / 2.14	***	0.32 (20%)

Data Plot and Equation



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APPENDIX C: Mountain Line TDM Policy



Northern Arizona Intergovernmental Public Transportation Authority

3773 N. Kaspar Drive · Flagstaff, AZ 86004 · 928-679-8900 · FAX 928-779-6868 · www.mountainline.az.gov

Employee and Visitor Transportation Demand Management Program for the New

Mountain Line Downtown Connection Center

Transportation Demand Management (TDM) is an important component of Mountain Line's work. Mountain Line employs one of the first TDM certified professionals in the country and is a member of the Association for Commuter Transportation, which is the foremost TDM professional organization in the country. Mountain Line has also developed multiple plans to enhance TDM within the city including the US 180 Plan, the On Demand Plan, Transit Guidelines and the 5-Year Plan. With that, Mountain Line is committed to be a model employer TDM program as we move forward with the DCC. Key components of the TDM program will include:

Bus passes:

- Every Mountain Line employee is automatically issued a free bus pass embedded in their employee ID. No opt in or extra steps needed.
- All employees are given free annual buses passes for family and an additional community member pass, further reducing driving to site by personal visitors.
- Mountain Line also offers a guaranteed ride home program.

Park and Ride

- Mountain Line will identify park and ride locations that can be used by employees traveling to the new DCC location – the existing Kaspar facility on the east side and is working on a to be determined location the west side.
- The Kaspar location will act as a park and ride for employees working at DCC. Route 2 runs every 20 minutes directly from this site to DCC. Employees will be allowed to clock in for travel time.

Biking Programs:

- Mountain Line will keep a fleet of mobility devices including bikes, e-bikes and scooters, at the DCC for staff, free of charge for mid-day trips. Mobility devices may be checked out to take home at night for commuting to and from work as well in a bike library format.
- Mountain Line will incentivize commuting by bike offer a bike reimbursement program to employees who commute by bike for 50% or more of their commuting trips each year.

Teleworking and Flexible Schedules:

Mountain Line has both teleworking and flextime policies available to staff whose job is conducive to alternative work schedules and environments. Teleworking days are unlimited but

Updated 6/15/2021



Getting you where you want to go





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eligible employees commit to regular schedules. Mountain Line spreads telework days out evenly amongst to ensure teleworking is evenly spread throughout the week. Flex schedules allow for reduction of required staff in the office and promote shared work spaces.

Education

Mountain Line offers regular travel training programs, showing people how to commute on alternatives modes with one on one trainer who travels their route with them and offers continuing lunch and learn programs to help people reduce trips to the worksite.

Updated 6/15/2021



Getting you where you want to go

