

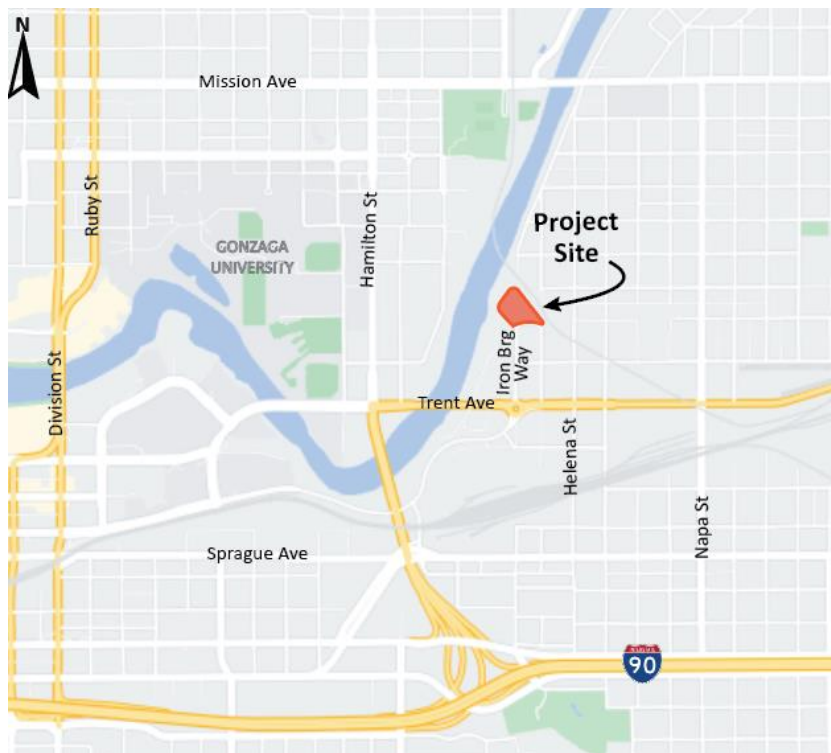
Technical Memo

To: City of Spokane
From: Ryan Shea, PTP, Senior Transportation Planner
Date: August 1, 2022
Project: Iron Bridge Apartments
Subject: Trip Generation and Distribution

Introduction:

Spectrum Development Solutions is proposing construction of the Iron Bridge Apartments project, a multifamily and off-campus student housing development at 811 N Iron Bridge Way in Spokane, Washington. The proposed project includes 262 residential units build over two construction phases. This Trip Generation and Distribution memo estimates the trip generation, distribution, and assignment for full build out of the proposed development. **Figure 1** illustrates the site vicinity and the transportation network serving the project area.

Figure 1. Site Vicinity



Proposed Development

The proposed project would construct three residential buildings providing a total of 262 units ranging from studio apartments to 3-bedroom units. It is expected that approximately one third of the residents will be students attending Gonzaga University, located just west of the project site. It is estimated that 87 units (94 bedrooms) will be utilized for off-campus student living and 175 units for multifamily rental housing. Access to the project is proposed to be from Iron Bridge Way. The proposed development will be constructed over 2 phases. Full build out of the proposed project is anticipated to be complete in 2024.

The preliminary site plan is attached.

Project Traffic Characteristics

The two project-related characteristics having the most effect on area traffic conditions are peak hour trip generation and the directional distribution of traffic volumes on the surrounding roadway network.

Site-Generated Traffic Volumes

Vehicle trip generation was calculated using the trip generation rates contained in the 11th edition of the Trip Generation Manual by the *Institute of Transportation Engineers (ITE)*. Multi-family Housing (Mid-Rise) Not Close to Rail Transit (land use code 221) and Off-Campus Student Apartment (Mid-Rise) (land use code 226) land use categories match the proposed development and have been used to calculate the trip generation.

For this analysis, the “fitted-curve” equation was used when available to estimate trips in preference to using the average trip rate as this approach was recommended by ITE.

The trip generation rates used for the AM peak hour are shown in **Table 1** and the PM peak hour trip are shown in **Table 2**.

Table 1. AM Peak Hour Trip Generation Rates

Land Use Category	Land Use Code (LUC)	Unit	Trip Rate	Enter %	Exit %
Multi-family Housing (Mid-Rise) Not Close to Rail Transit	221	Dwelling Units	0.37*	23%	77%
Off-Campus Student Apartment (Mid-Rise)	226	Bedrooms	0.07	46%	54%

*Fitted curve equation rate

Table 2. PM Peak Hour Trip Generation Rates

Land Use Category	Land Use Code (LUC)	Unit	Trip Rate	Enter %	Exit %
Multi-family Housing (Mid-Rise) Not Close to Rail Transit	221	Dwelling Units	0.39*	61%	39%
Off-Campus Student Apartment (Mid-Rise)	226	Bedrooms	0.21	47%	53%

*Fitted curve equation rate

The total trip generation expected from this project is calculated by applying the unit measure for each land use category to the appropriate trip generation rate. The AM peak hour trip generation calculations are shown in **Table 3** and the PM peak hour trip generation calculations are shown in **Table 4**. All of the trip generation calculations, including daily traffic, are attached.

Table 3. AM Peak Hour Project Trip Generation

Land Use	Size	Total Trips	Enter	Exit
Multifamily Rental Housing	175 (units)	65	15	50
Off Campus Student Housing	94 (bedrooms)	7	3	4
Total Project Trips	-	72	18	54

Table 4. PM Peak Hour Project Trip Generation

Land Use	Size	Total Trips	Enter	Exit
Multifamily Rental Housing	175 (units)	69	42	27
Off Campus Student Housing	94 (bedrooms)	20	9	11
Total Project Trips	-	89	51	38

Site Traffic Distribution and Assignment

For this study, the regional distribution of traffic to and from the proposed project was estimated based on locations and densities of commercial and employment areas. The regional traffic distribution percentages and site traffic assignment for the proposed development for the PM peak hour are shown on **Figure 2**.

We have presented this information for the City's use in determining if additional analysis will be required and if so, the specific analysis parameters for a Traffic Impact Analysis. If you have any questions or need additional information, please call me at 360.352.1465.

Respectfully,
SCJ Alliance



Ryan Shea, PTP
Senior Transportation Planner

Enclosures: Preliminary Site Plan
Trip Generation Calculations
Figure 2



Iron Bridge Apartments

Spokane, WA
Trip Generation

Project Trip Generation

PM Peak Hour Trip Generation										
Site Plan Description	LUC	ITE Description	Variable	Value	Trip Rate	Distribution		Total Trips		
						In	Out	In	Out	Total
Multifamily Rental Housing	221	Multifamily Housing (Mid-Rise) Not Close to Rail Transit	Dwelling Units	175.0	0.39	61%	39%	42	27	69
Off-Campus Student Housing	226	Off-Campus Student Apartment (Mid-Rise)	Bedrooms	94.0	0.21	47%	53%	9	11	20
Total								51	38	89

221 Fitted Curve Equation 0.39

AM Peak Hour Trip Generation										
Site Plan Description	LUC	ITE Description	Variable	Value	Trip Rate	Distribution		Total Trips		
						In	Out	In	Out	Total
Multifamily Rental Housing	221	Multifamily Housing (Mid-Rise) Not Close to Rail Transit	Dwelling Units	175.0	0.37	23%	77%	15	50	65
Off-Campus Student Housing	226	Off-Campus Student Apartment (Mid-Rise)	Bedrooms	94.0	0.07	46%	54%	3	4	7
Total								18	54	72

221 Fitted Curve Equation 0.37

Daily Trip Generation										
Site Plan Description	LUC	ITE Description	Variable	Value	Trip Rate	Distribution		Total Trips		
						In	Out	In	Out	Total
Multifamily Rental Housing	221	Multifamily Housing (Mid-Rise) Not Close to Rail Transit	Dwelling Units	175.0	4.54	50%	50%	397	398	795
Off-Campus Student Housing	226	Off-Campus Student Apartment (Mid-Rise)	Bedrooms	94.0	2.57	50%	50%	121	121	242
Total								518	519	1,037

221 Fitted Curve Equation 4.50

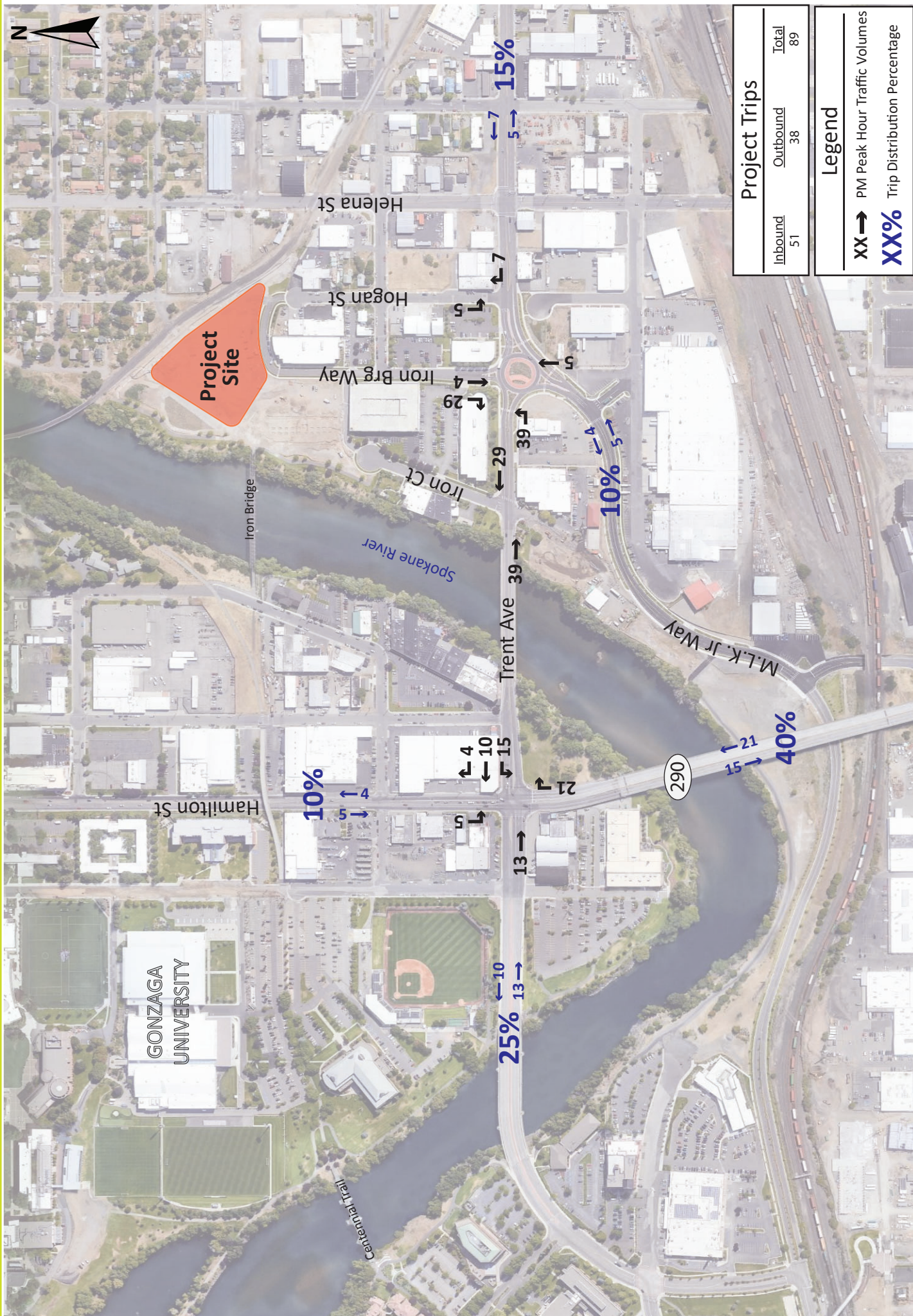


Figure 2
 Site-Generated Traffic Volumes
 PM Peak Hour

Iron Bridge Apartments
 Spokane, Washington
 Trip Generation and Distribution