

Shadow Impact Example

Introduction

To illustrate the shadow impacts of tall buildings at various heights, Administration prepared a shadow impact example of a hypothetical development within the Mixed-Use Downtown Core.

The City-owned parking lot at 3rd Avenue and Steele Street was chosen as a location due to its current zoning allowing a maximum building height of 25 m, and its central location within the Downtown. The examples do not represent any current development plans on behalf of the City and are for discussion purposes only.

The building depicted has a footprint of approximately 2000 m², which is similar to other taller buildings developed within the Downtown.

Methodology

A 3D model of buildings within the Downtown was generated from open data on Open Street Maps. The dataset is an approximation of current development and the accuracy of building heights and footprints varies from parcel to parcel.

Shadows were illustrated for different times at three different dates of the year: December 21 (Winter Solstice), March 21 (Spring Equinox), and June 21 (Summer Solstice). The sun is in the same position during the Fall Equinox as it is during the Spring Equinox. Therefore, shadowing on September 21 is not depicted.

How to Read

The example development at 3rd and Steele is yellow, with the surrounding existing development in white. The *new* shadow cast by the example development is also in yellow, with existing shadows grey.

Example:

Shadow impacts of 25 m development on June 21 at 8:00am.

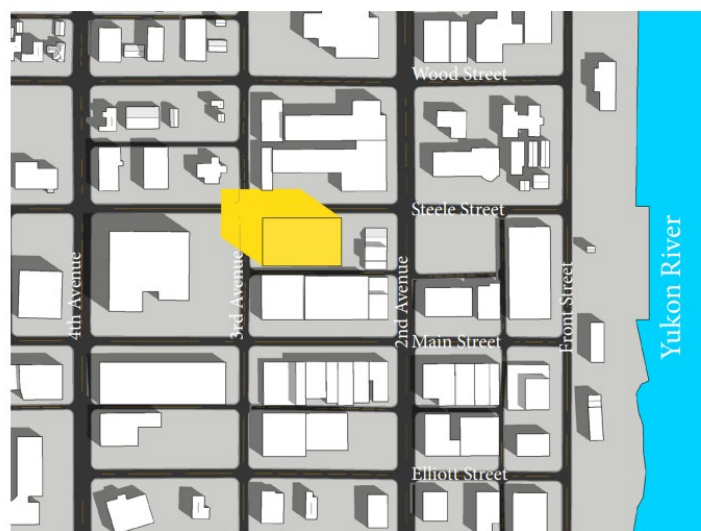


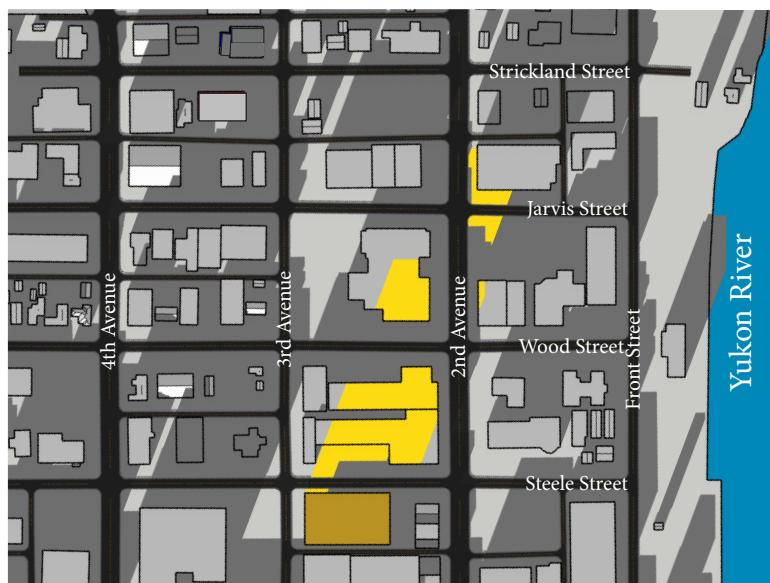
Figure 1. 25 m Building Shadow on June 21 at 8:00am.

Date: December 21 (Winter Solstice)
Location: 3rd Avenue & Steele Street

11:00AM

12:00PM

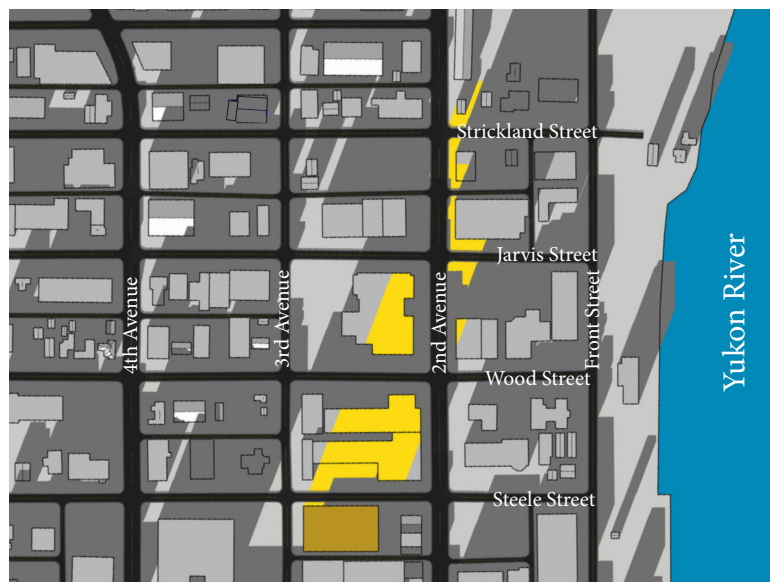
25 m



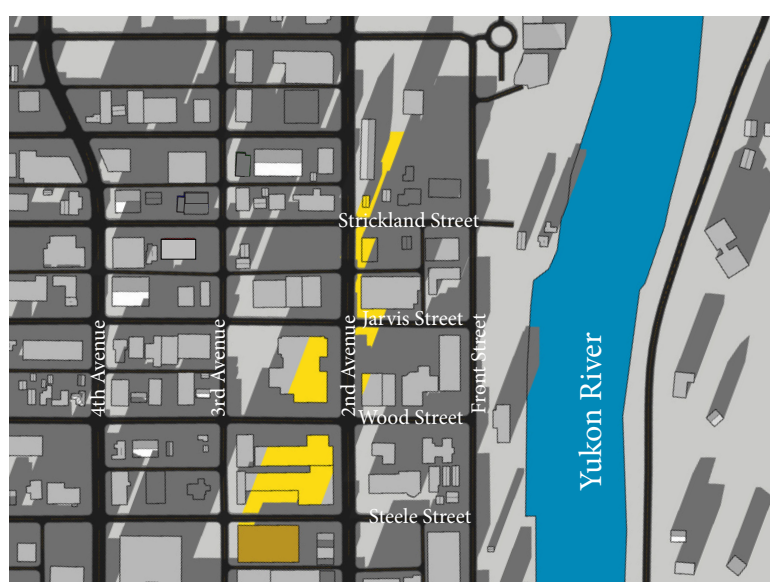
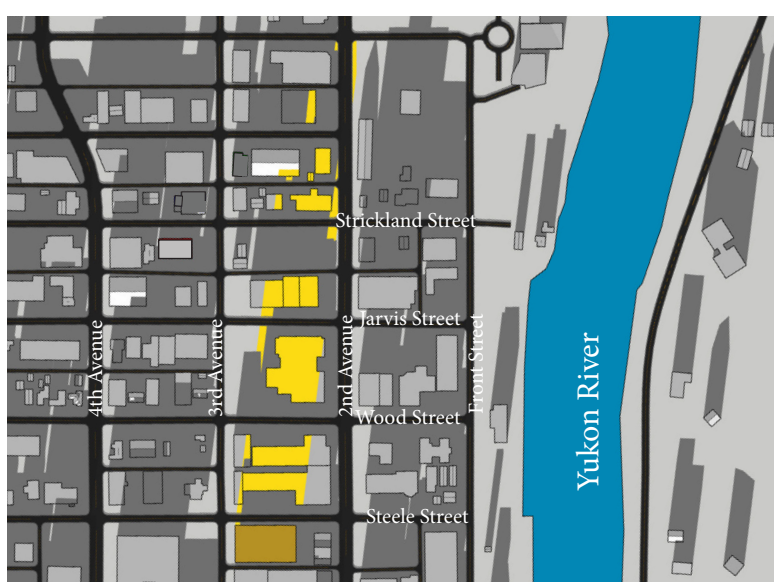
30 m



35 m



40 m

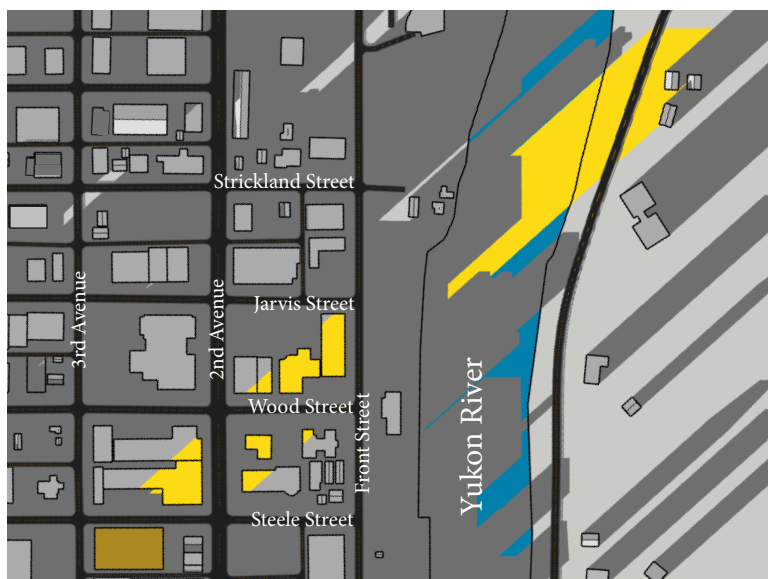


Date: December 21 (Winter Solstice)
Location: 3rd Avenue & Steele Street

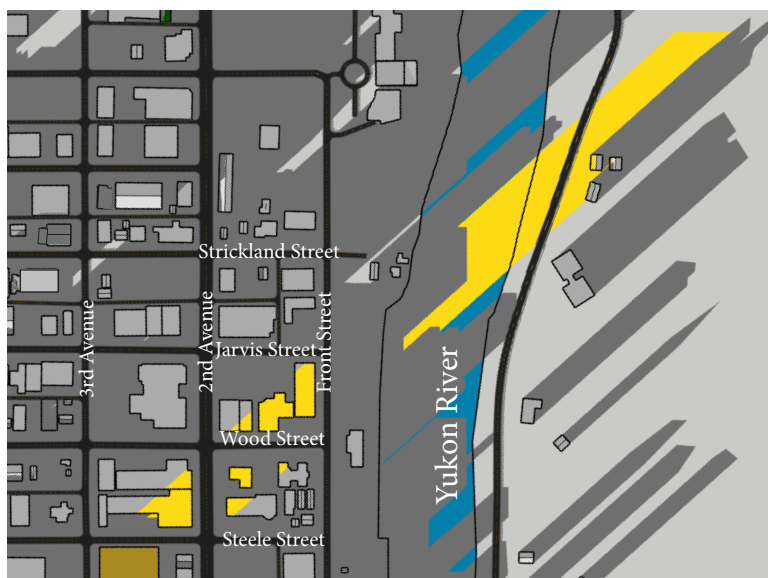
1:00PM

2:00PM

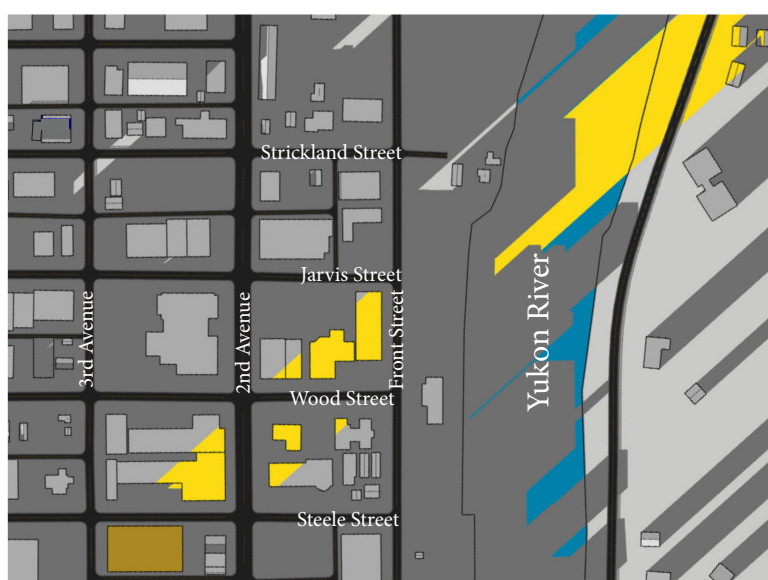
25 m



30 m



35 m



40 m

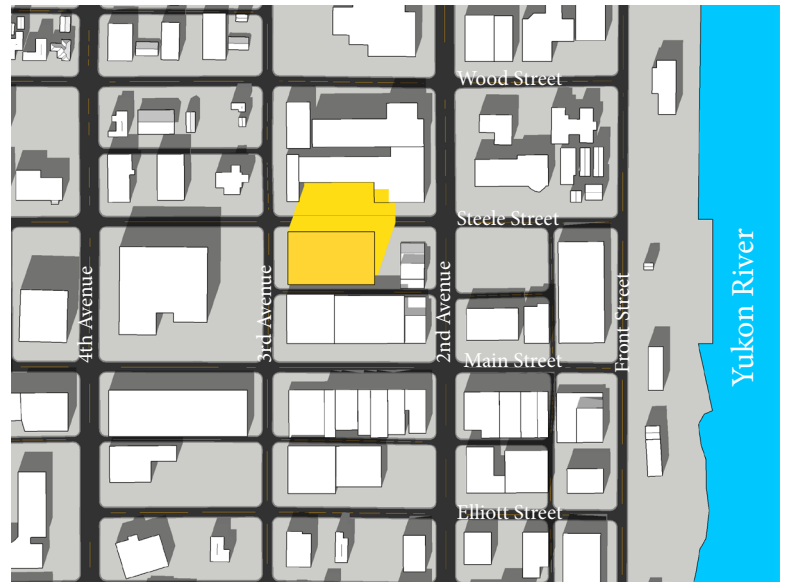
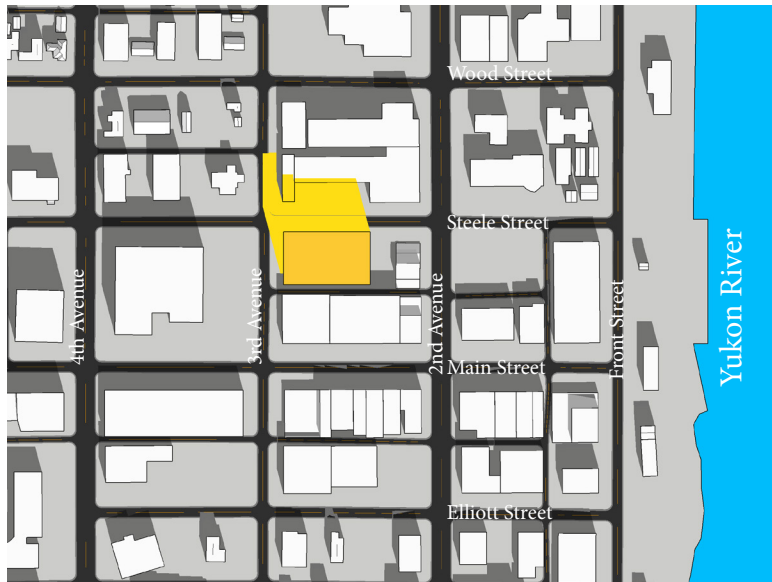


Date: March 21 (Spring Equinox)
Location: 3rd Avenue & Steele Street

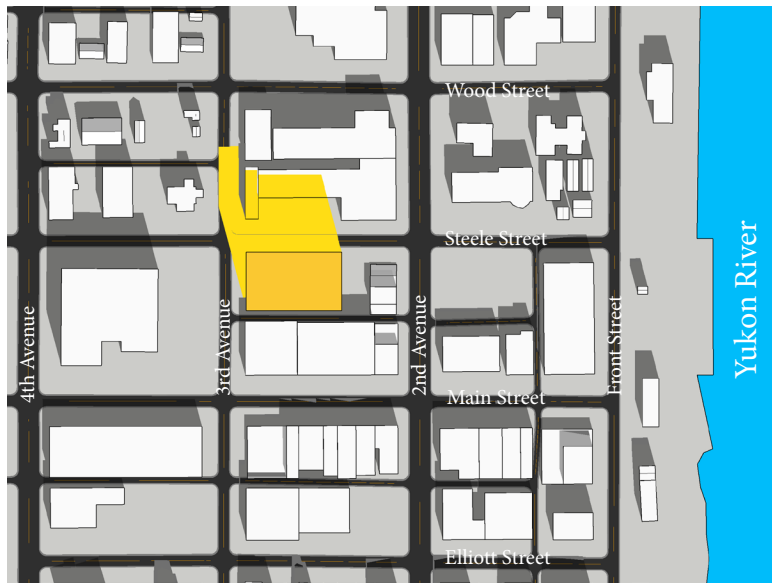
10:00AM

12:00PM

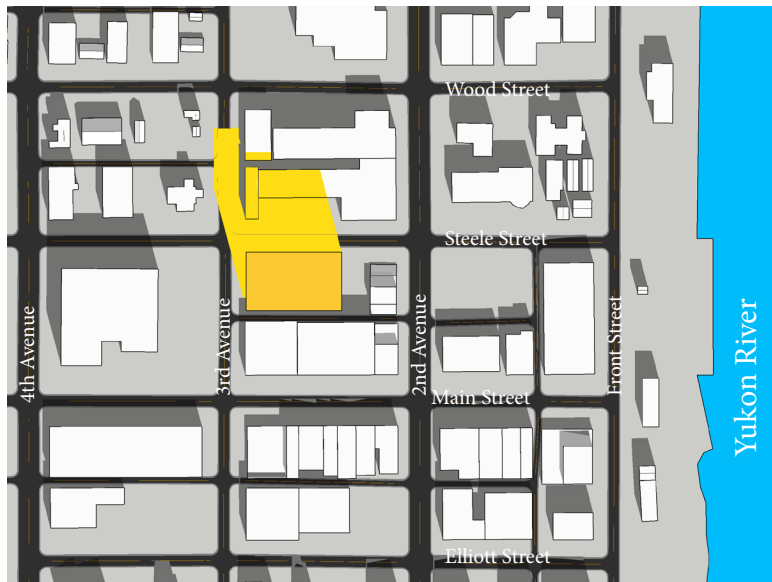
25 m



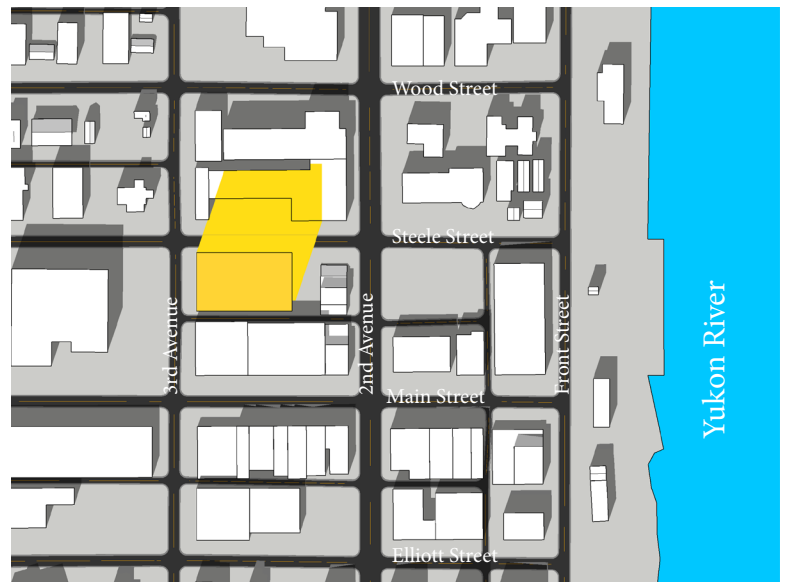
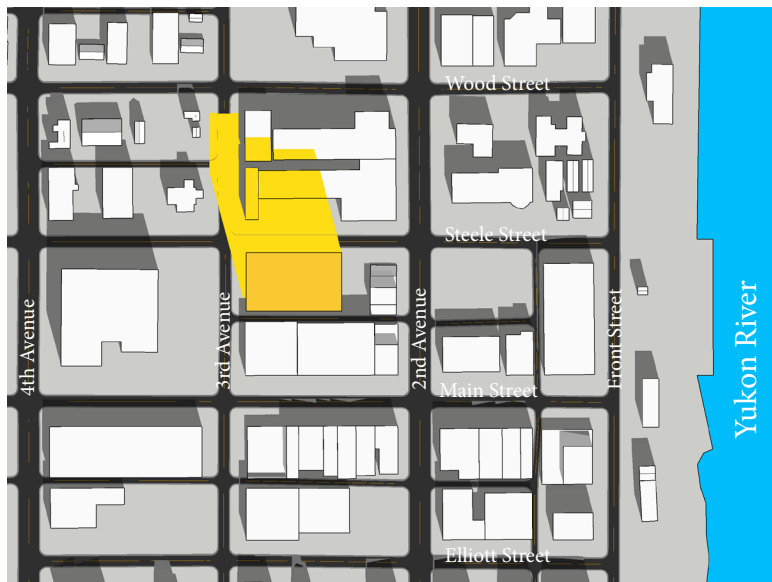
30 m



35 m



40 m

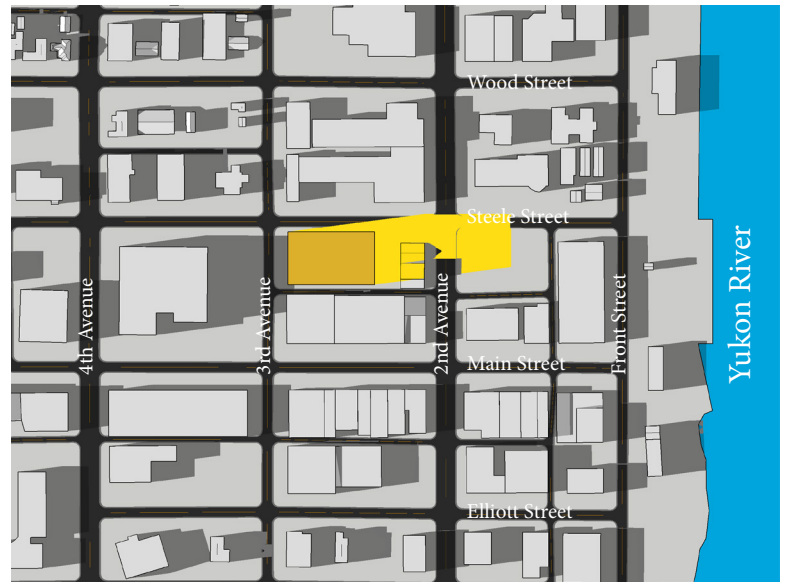
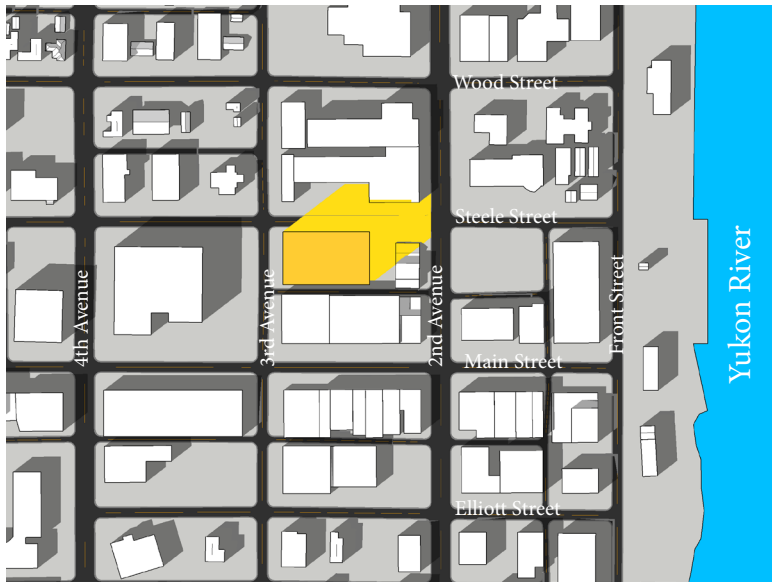


Date: March 21 (Spring Equinox)
Location: 3rd Avenue & Steele Street

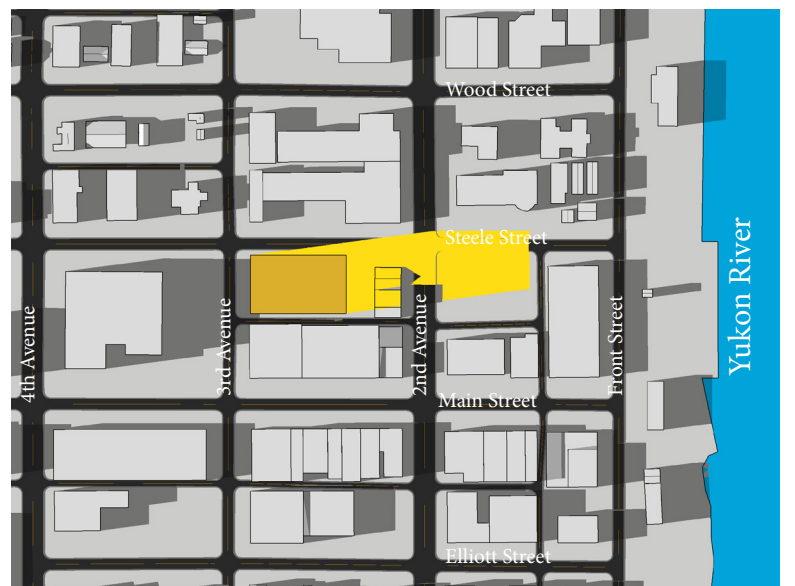
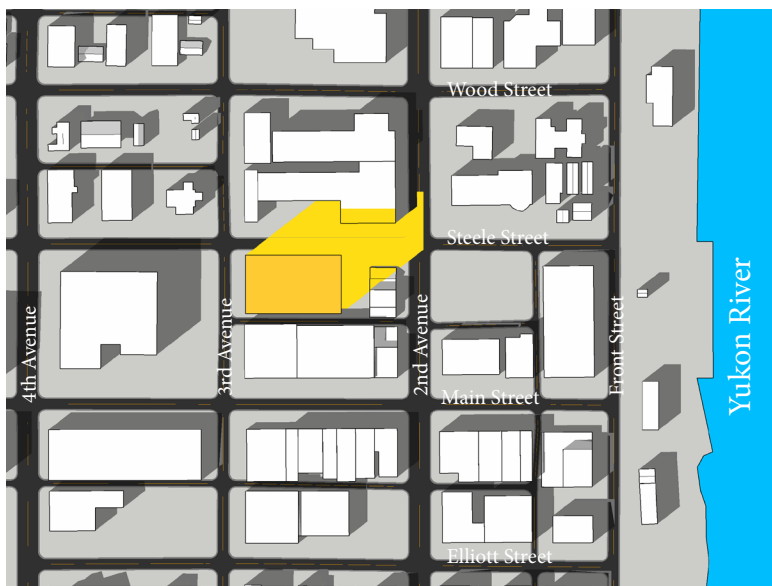
2:00PM

4:00PM

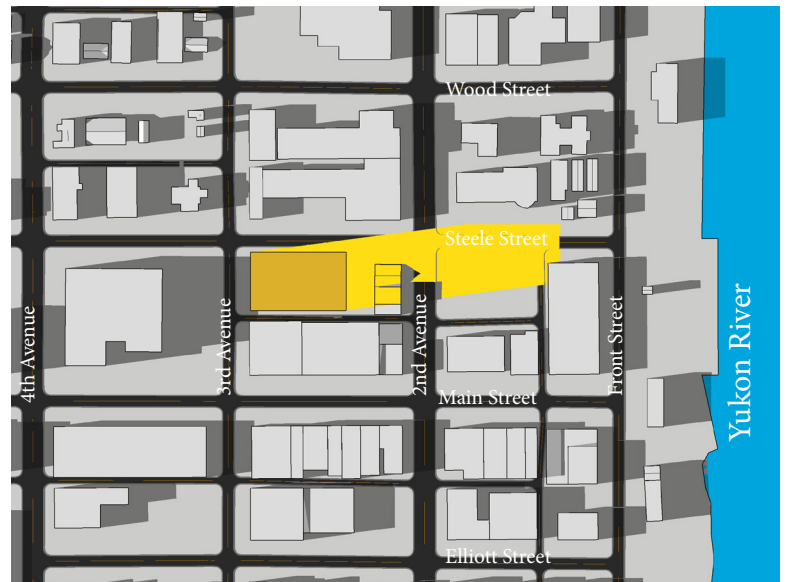
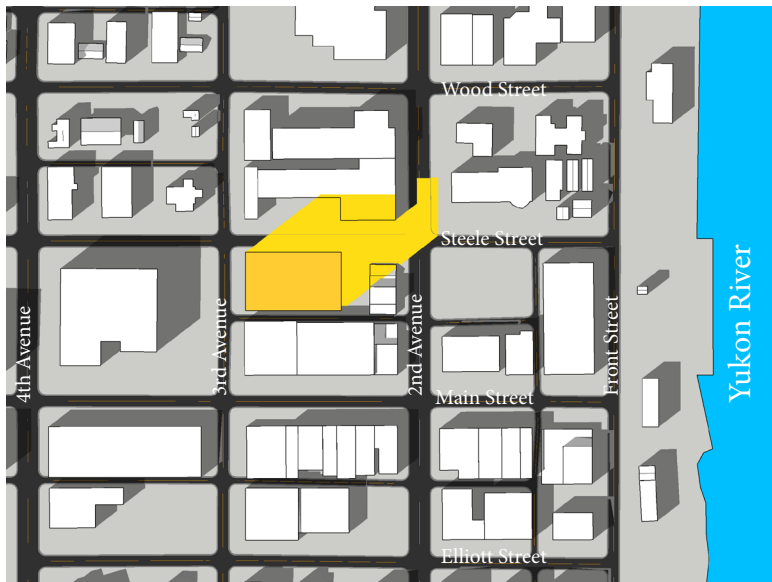
25 m



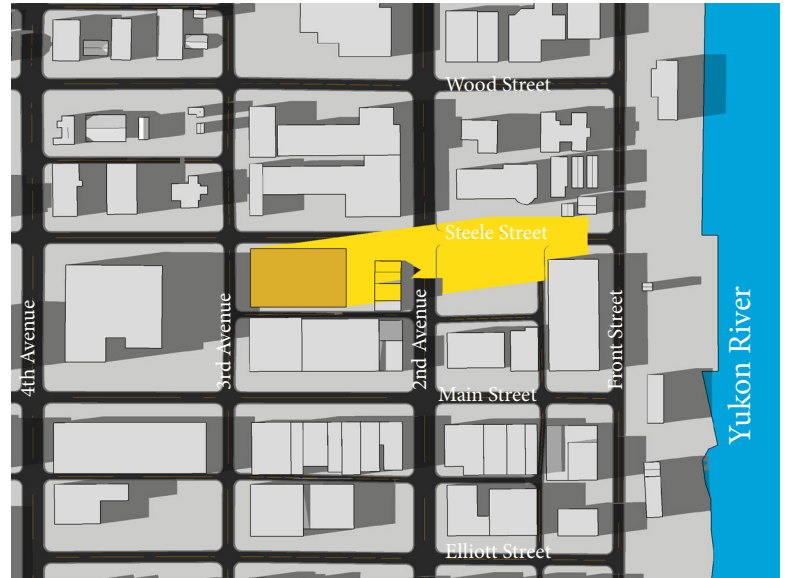
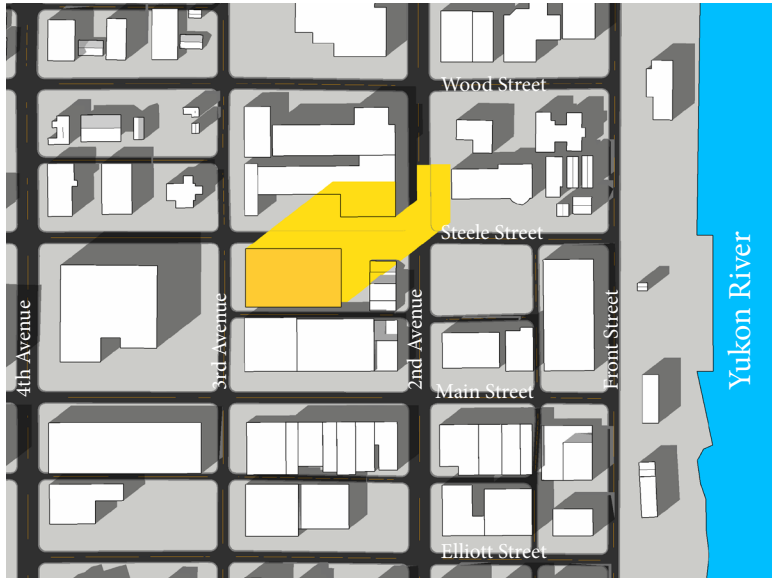
30 m



35 m



40 m

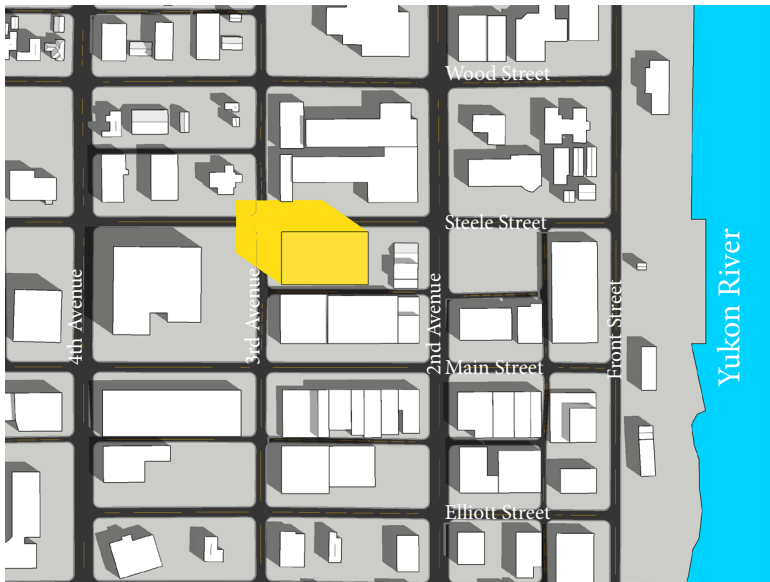


Date: June 21 (Summer Solstice)
Location: 3rd Avenue & Steele Street

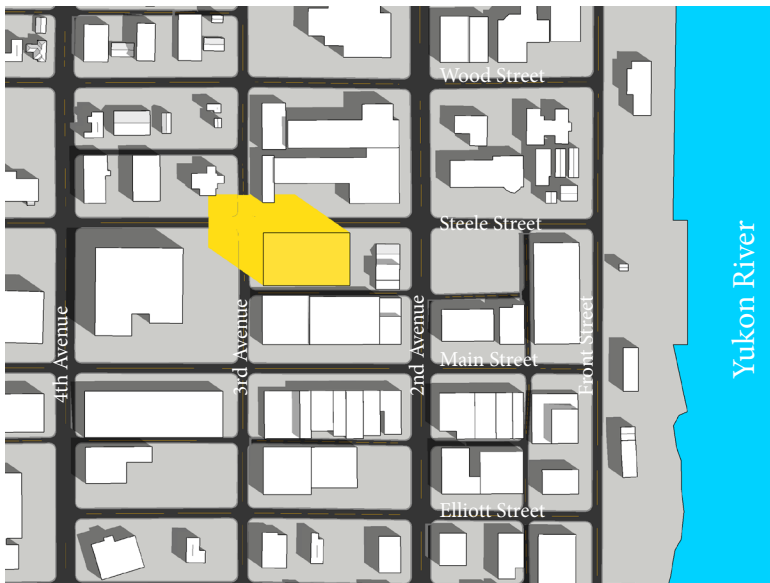
8:00AM

10:00AM

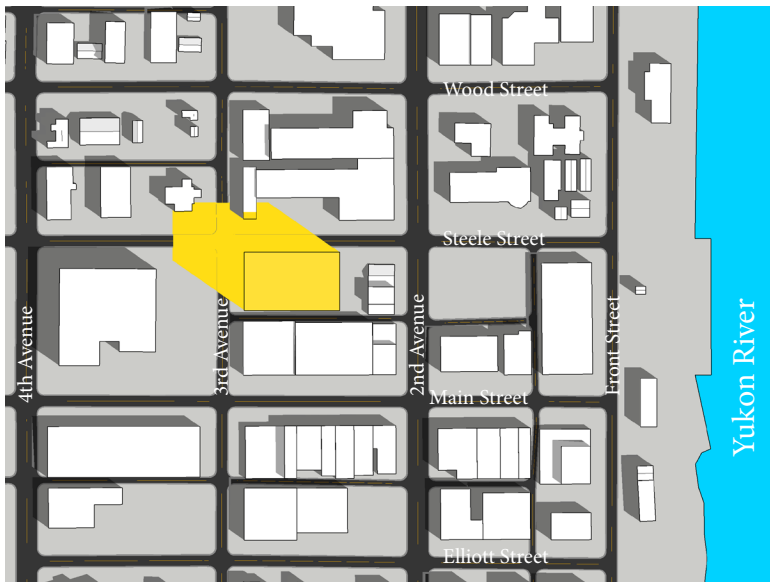
25 m



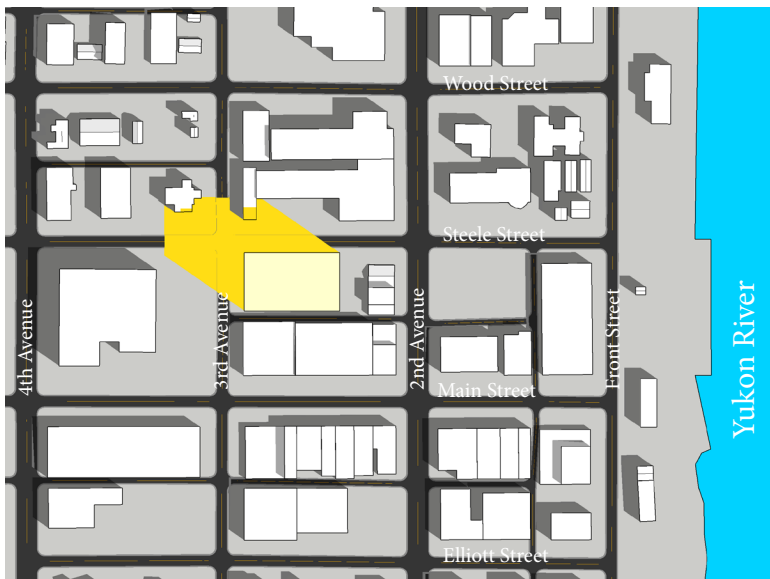
30 m



35 m



40 m

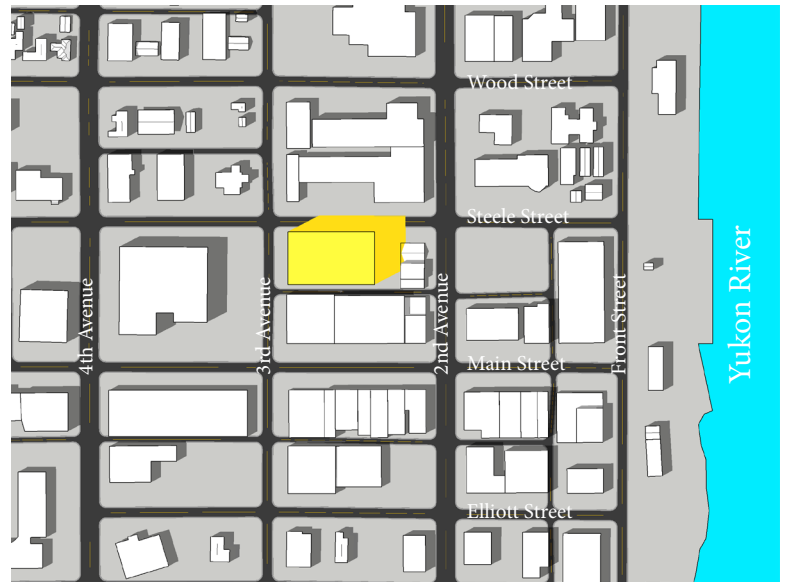
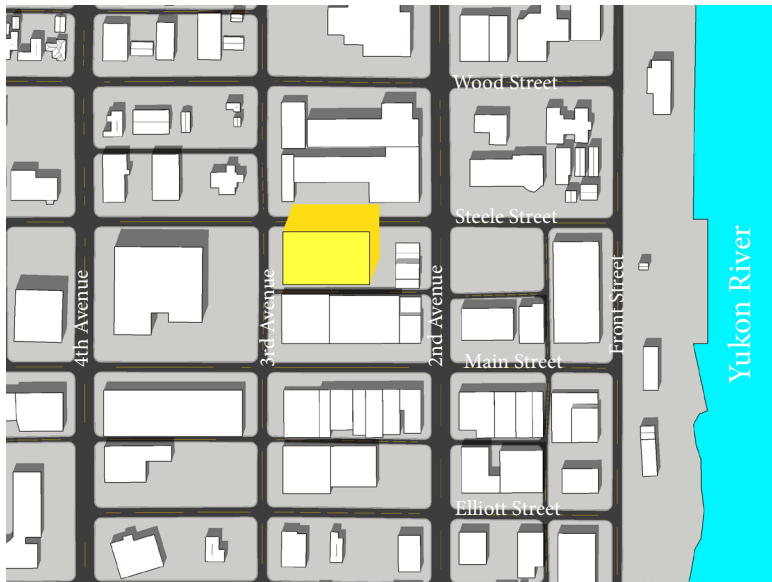


Date: June 21 (Summer Solstice)
Location: 3rd Avenue & Steele Street

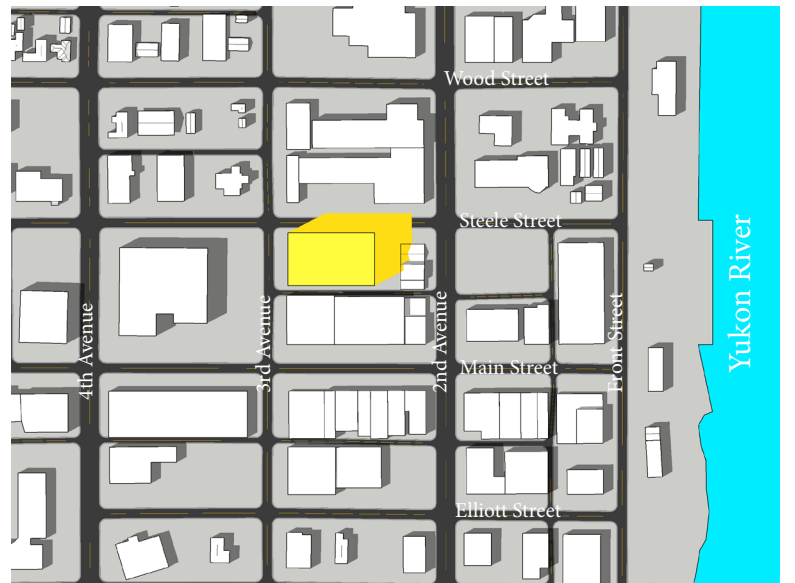
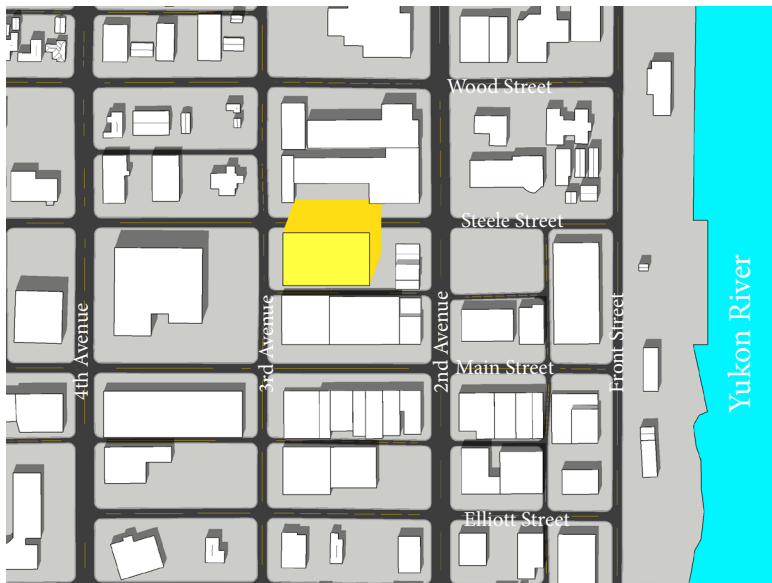
12:00PM

2:00PM

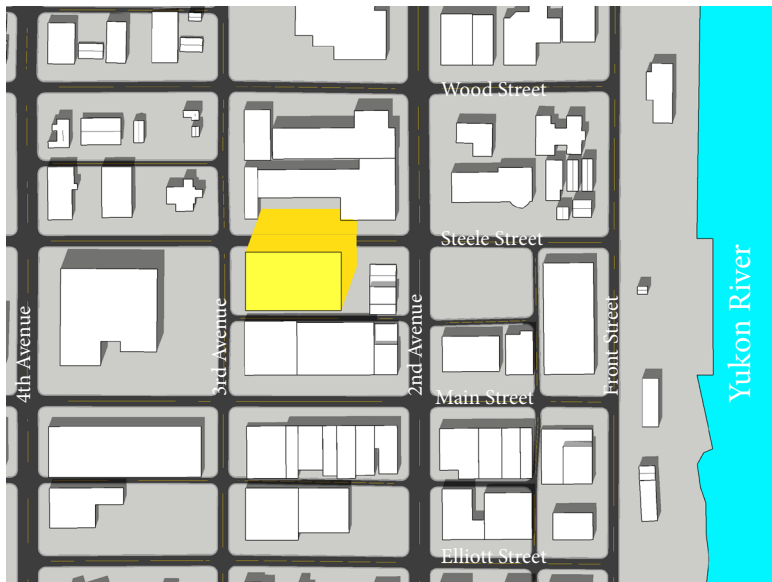
25 m



30 m



35 m



40 m



Date: June 21 (Summer Solstice)
Location: 3rd Avenue & Steele Street

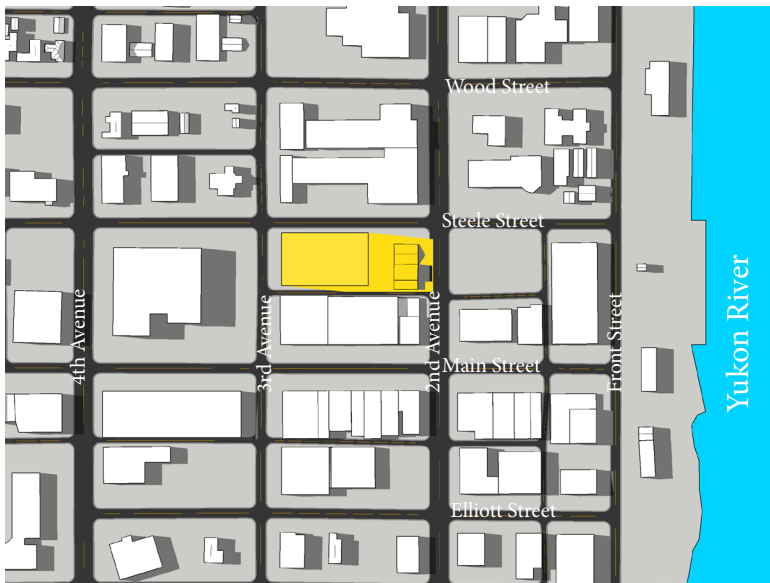
4:00PM

6:00PM

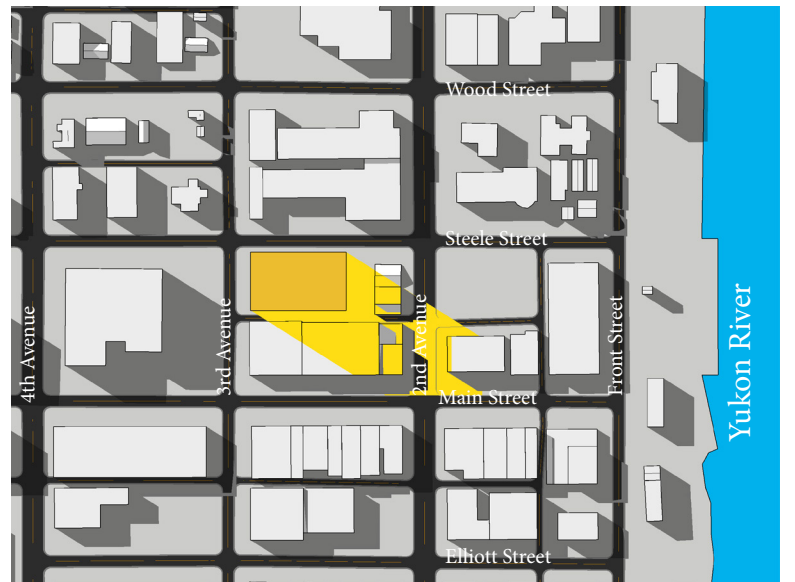
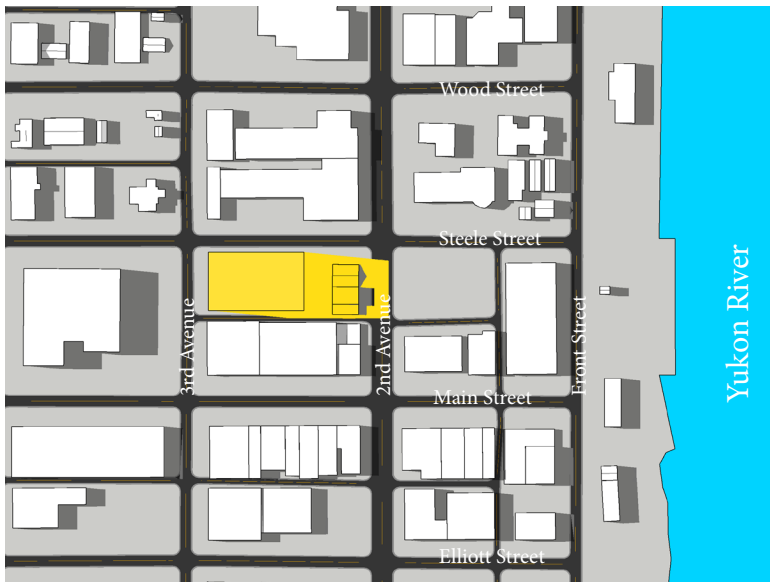
25 m



30 m



35 m



40 m

