

# Defining and Protecting Character in the North East Neighborhood

Arch 523: Participatory Design and Collaborative Planning

Professor Susanne Cowan

For the City of Bozeman and the North East Neighborhood Association

November 20, 2020



**MONTANA**  
STATE UNIVERSITY

School of  
Architecture

ARCHITECTURE  
MATTERS

# Project Goals

- The City of Bozeman Neighborhood Liaison and the leadership of the North East Neighborhood Association are seeking to define neighborhood character in the face of changes taking place in the area.
- This class has been tasked with helping to define what is meant by neighborhood character and how it can be measured and/or protected.
- The goal is to collect useful data that can be used to pursue a future Neighborhood Conservation Overlay District (NCOD), neighborhood plan, or other policy change in the area.



# Project Objectives

- To narrow which quantitative or qualitative should be documented in a future neighborhood inventory
- To develop data gathering tools for a physical inventory and/or social survey
- To develop a plan for how residents and/or students in future MSU classes can use the tools to gather data



# Defining Neighborhood Character

This class chose to focus on the following aspects of character:

- Physical Characteristics of Front Yards
- Physical Characteristics of Back Yards
- Physical Characteristics of Alleys
- Socialization Behavior Patterns
- Level of Involvement in Community Organizing

Documenting these existing patterns may help identify potential future regulations to preserve and promote these characteristics in future development.



# Defining Neighborhood Character

This class identified the following aspects of neighborhood character for future research using GIS mapping:

- Age of structures
- Building Heights to calculate the average height for block
- Floor Area Ratios, Lot coverage ratios, and Setbacks
- Viewsheds
- Tree Inventory



# Defining Neighborhood Character

Additional aspects of neighborhood character not typically regulated under NCOD:

- Demographic changes in age, income, housing tenure, or geographic origin
- Jobs and commercial businesses in the area
- Ratio of public to private space
- Width of Streets and Alleys
- Walkability Index
- Public Art and Home Personalization



# Project Groups

The students split up the work into four themes:

- Social Survey on Attitudes Towards Change
- Physical Inventory of Front Yards
- Physical Inventory of Back Yards
- Physical Inventory and Social Survey of Alleys



# Attitudes Towards Change

Northeast Neighborhood Association (NENA)



**Created by:**  
**Rachael Johnson**  
**Lucia Stewart**



# Research Questions

The following surveys can be used by NENA to assess their neighborhood demographics, the sense of community and how resistant or participatory residents are to change occurring in their neighborhood.

## **SURVEY 1**

### **Questions:**

What are the demographics of the Northeast Neighborhood? How does “Attitude towards Change” vary within the NENA neighborhood? How does a sense community affect how resistant or participatory they are to change?

### **Hypothesis:**

If a citizen has an invested sense of community and feel resources are accessible for community engagement, they are more apt to participate in both.

### **Application:**

To obtain demographics of NENA. To provide citizen participatory resources to NENA residents.

## **SURVEY 2**

### **Questions:**

How does “Attitude towards Change” vary within the NENA neighborhood (a deeper assessment)? Does a citizen’s participation in local government influence their “Attitude towards Change”?

### **Hypothesis:**

If a citizen is engaged in the local community and bureaucracy, their attitudes towards change will vary. Areas that are closer to newer higher density developments have more negative attitudes towards change and those who are more involved with local government have more positive outlook towards change.

### **Application:**

Use data from surveys and NENA quadrant locations to determine where people with various attitudes reside.

# Methods

## Cross Sectional Survey

### Survey 1:

This survey created by MSU ARCH 523 class to will be distributed to NENA residents through:

- the Fall 2020 NENA newsletter with a paper copy and instructions for submission and/or
- online link to complete the survey. It will also be posted online on NENA website ([www.nenabozeaman.org](http://www.nenabozeaman.org)).
- *Optional:* At the end of the survey, provide additional resources in addition to an option to have a NENA representative contact them.

## Follow-up Survey

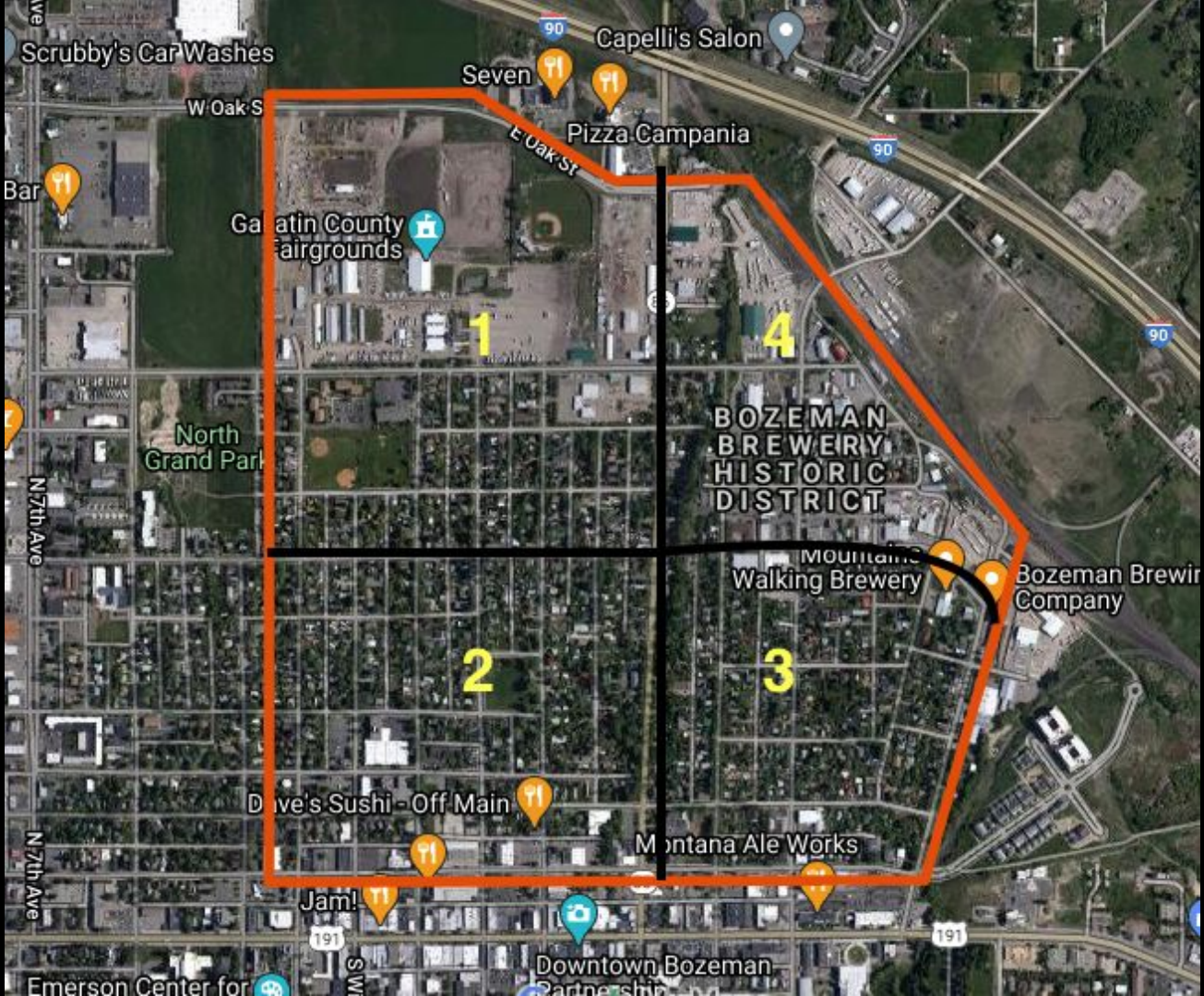
### Survey 2:

Those individuals that completed the first survey, would receive an additional survey. This survey's goal is:

- to go more in depth on the qualitative side of Attitudes Towards Change in NENA.
- focus on getting a more detailed view of the neighborhood.
- Distributed directly to those who participated in the previous survey
- distributed by subsequent MSU classes

## Optional Combination of Survey 1 & 2:

This would be a combination of both Survey 1 and 2. To be distributed Simultaneously as Survey 2 in order to obtain survey results from those who did not participate in Survey 1 in Fall 2020.



Scrubby's Car Washes

Capelli's Salon

Seven

Pizza Campania

Bar

W Oak St

E Oak St

Galatin County Fairgrounds

1

4

North Grand Park

BOZEMAN BREWERY HISTORIC DISTRICT

N 7th Ave

Mountain Walking Brewery

Bozeman Brewir Company

2

3

Dave's Sushi - Off Main

Montana Ale Works

N 7th Ave

Jam!

Downtown Bozeman Partnership

Emerson Center for

S W

191

# **SURVEY 1**

The goal of this survey is to understand the character of the North East neighborhood of Bozeman and to plan for its future.



**This survey is currently *LIVE* at**

**<https://tinyurl.com/bozeman-nena-survey>**



This survey was created by students and faculty at Montana State University in partnership with leaders from the North East Neighborhood Association (NENA) and the City of Bozeman staff members. The goal of this survey is to understand the character of the North East neighborhood of Bozeman and to plan for its future.

Within the North East Neighborhood of Bozeman, MT: (check all that apply)

- I own a home/condo that I occupy
- I own a home/condo that I rent out as a landlord
- I rent a home/condo/apartment
- I run a business
- I am a landlord of a commercial property
- Other (please specify)
- I have no relationship with the North East neighborhood.

Is your primary residence located within the boundaries of the North East Neighborhood?

North Broadway Street to the west, North Grand Avenue to the east, East Mendenhall Street to the north, and North Oak Street to the south

- Yes
- No

If you live in NENA, in which quadrant is your residence located?

- 1 (north of Peach, west of Rouse)
- 2 (south of Peach, west of Rouse)
- 3 (south of Peach, east of Rouse)
- 4 (north of Peach, east of Rouse)

If you live in NENA, what type of home do you live in?

- Detached Home
- Duplex
- Building with 3 or more homes
- Accessory Dwelling Unit (ADU) i.e. an In-Law Unit or Granny Flat
- Other (please specify)

How long have you lived, worked, owned property, and/or run a business in the NENA neighborhood?

- Less than 1 year
- 1-2 years
- 3-4 years
- 5-7 years
- 8-10 years
- 11-15 years
- 16-20 years
- 20+ years

What is your age?

- Under 18
- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65 - 74
- 75 - 84
- 85 or older

What is your gender?

- Male
- Female
- Prefer to Self Describe
- Prefer not to answer

What is one word that describes the North East Neighborhood?

What do you like most about your neighborhood? (check all that apply)

- Historic industrial buildings
- Historic homes
- Moderately sized homes
- Distance between homes
- New buildings
- Sheds
- Alleys
- Front yards
- Back yards
- Sidewalks
- Boulevards (planted areas between sidewalks and streets)
- Trees
- Parks
- Access to trails
- Views
- Walkability
- Access to downtown
- Local businesses
- Public Art
- Neighbors
- Other (please specify)

Where do you usually engage with your neighbors? (check all that apply)

- Inside of Homes
- Front porches
- Front yards
- Backyards
- Decks
- Alleyways
- Sidewalks
- Parks
- Local businesses
- Community social gatherings
- other (please specify)

What do you like most about your neighborhood? (check all that apply)

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- Front yards
- Backyards
- Decks
- Alleyways
- Sidewalks
- Parks
- Local businesses
- Community social gatherings
- other (please specify)

In a typical 12 month period, approximately how often do you have get-togethers with neighbors?

- Never
- Once a year
- Once every few months
- Once a month
- Several times a month
- Several times a week

Approximately how many of your neighbors on your block do you know by name and/or by sight?

- Less than 25%
- 25-50%,
- 51-75%
- more than 75%.

How do you feel about the changes taking place in the North East neighborhood?

- Very positive
- Somewhat positive
- Neither positive nor negative
- Somewhat negative
- Very negative

Please explain your reasoning for the response you entered above about changes in the North East neighborhood.

What would you like to stay the same in the North East Neighborhood?

What is a problem or concern you would like to see addressed in the North East Neighborhood?

When people in the North East Neighborhood try to create positive community change, Bozeman elected officials and government employees are usually responsive.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Please explain your reasoning for the response you entered above about the responsiveness of elected officials and government employees.

I am involved and participate in the North East neighborhood.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

In the past three years, which of the following ways have you participated in the North East Neighborhood (check all that apply):

- Attended a NENA meeting
- Served in a leadership position for NENA
- Attended the Parade of Sheds
- Wrote comments to City of Bozeman about neighborhood issues
- Attended a public meeting for the City of Bozeman
- Attended a Visioning Meeting about Cottonwood and Ida
- Participated in the Photovoices project in Summer 2019
- Other (please specify)
- I have not participated in the North East Neighborhood

Would you like a NENA representative to follow-up with you about neighborhood and city engagement opportunities?

- Yes (please include contact information)
- No

# SURVEY 2

The goal of this survey is to obtain a deeper understand of “Attitude Towards Change” in NENA, and how resistant or participatory residents are to change occurring in their neighborhood.

*Please view additional PDF for a close-up survey view.*

"Attitudes Towards Change" Survey						
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I feel driven to participate in community activities.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
2	I can influence the decisions that are made by the lawmakers in my community.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3	I want my neighborhood to change.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4	I feel like my neighborhood is changing in the right direction.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5	I would consider moving because of changes in the neighborhood	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
6	I want my neighborhood to change at a slower pace than is currently happening.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
7	<b>In my opinion, change in my neighborhood should:</b>					
	Not at all	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Directed outside of NENA	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Include commercial businesses	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Be less density/infill driven	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Allow larger homes to replace smaller homes, as long as the front yard space is maintained	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Include additional trail systems	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Provide more options for lower income and multi-family housing	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Allow for more ADU's (Additional Dwelling Units)	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Include more small maker space/artisan spaces	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
8	<b>I find the reason I don't participate in my community is:</b>					
	Don't know how to do it	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Time required	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Cost	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	I don't own property	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Inconvenient times and places	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Desire to keep things the way they are	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Physical or health limitation	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	I don't have an interest or I am indifferent	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
9	What do you think makes this neighborhood unique?					
10	What is missing in the neighborhood?					
11	If changes are made in NENA, what would you like to see changed or remain the same?					
12	In the space provided, please tell us any other opinions or concerns					



## "Attitudes Towards Change" Survey

1	I feel driven to participate in community activities.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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12	In the space provided, please tell us any other opinions or concerns							

An aerial photograph of a town nestled in a valley, with large, rugged mountains in the background. The town is densely packed with green trees and buildings. The mountains are brownish-green, suggesting a semi-arid climate. The sky is clear and blue.

**QUESTIONS  
and  
FEEDBACK?**  
*please*

Front Yards  
Northeast Neighborhood,  
Bozeman, MT

Christian, Rafael, Travis

## **What data will we collect?**

- Quantitative data on the current physical aspects of front yards

## **Why will this data help NENA?**

- Help define the CHARACTER of the Northeast Neighborhood

## **How will you collect this data?**

- Researchers will collect information by conducting street walks, analyzing aerial imagery, cadastral and other sources.

# What

Researchers will collect the following information regarding front yards in the Northeast neighborhood.

- **Orientation** - south, west, north, east
- **Fences** - purpose, height, transparency, material
- **Vegetation** - trees, shrubs, hedges, other
- **Porches / porticos** - size, envelope, material
- **Zoning** - Setback, visibility, building footprint
- **Driveways** - street parking, road access
- **Sidewalks/Boulevards** - vegetation

As the project develops this list can be modified and added to.

# Why

Front yards are important in understanding and defining the character of a neighborhood. Collecting this information will allow the researchers to develop better understanding of the front yards in the Northeast neighborhood.

The researchers can develop more concise definitions and descriptions of how these areas are used throughout the neighborhood.

Front yards are extremely public as they can be seen from the sidewalk, and even the street. This means it's the majority of what people see, and can be the most important defining characteristic.

# How

## Visual observation

Each residential front yard in the Northeast neighborhood boundary will be observed.

A weakness to this approach is the increased amount of time and effort that will be required in order to physically observe each yard.

## Aerial imagery and policy/regulation

Gather established regulations and policies that relate to front yards (setbacks, parking)

By using resources such as Google Earth, the Cadastral, GIS data (size, canopy cover)



# Data collection tool

By utilizing a google form the researches can quickly identify individual address and collect the information about the yard through a quick series of questions that then store the information in a google sheets format. This allows researchers to quickly and effectively collect and analyze this data, while also giving access to whoever it is shared with.



Google forms allows simple interface for observers to quickly collect data points with the use of a smartphone or tablet.



Google sheets converts the data from the form into a spreadsheet that researchers can then use to develop the character of front yards.

# Google Forms Example

## Front Yards

Northeast Neighborhood, Bozeman, MT

The name and photo associated with your Google account will be recorded when you upload files and submit this form. Not [christiansnell3@gmail.com](mailto:christiansnell3@gmail.com)? [Switch account](#)

\* Required

Address \*

Your answer

Picture

 Add file

Front yard orientation \*

- North
- East
- South
- West

Sidewalk \*

- Yes
- No
- Other: \_\_\_\_\_

Fence \*

- Yes
- No
- Other: \_\_\_\_\_

Front porch/portico \*

- Yes
- No
- Other: \_\_\_\_\_

Tree(s), on property \*

Your answer

Vegetation (bushes/flowers) \*

Your answer \_\_\_\_\_

Driveway \*

Yes

no

garage

Other: \_\_\_\_\_

Street parking \*

Yes

No

Other: \_\_\_\_\_

Comments/Notes \*

Your answer \_\_\_\_\_

Submit



The use of google earth street view can help get a general feel to complete the forms, but a walkthrough of the neighborhood in person is recommended. Notifying the city/police is also recommended before dozens of students are walking around.

Address  
3 responses

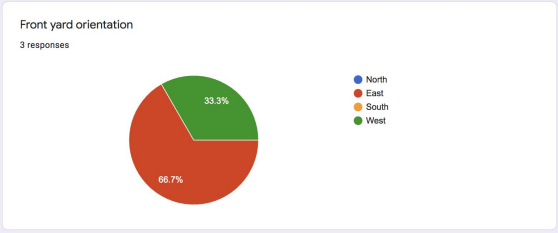
1

2

3

Picture  
0 responses [View folder](#)

No responses yet for this question.

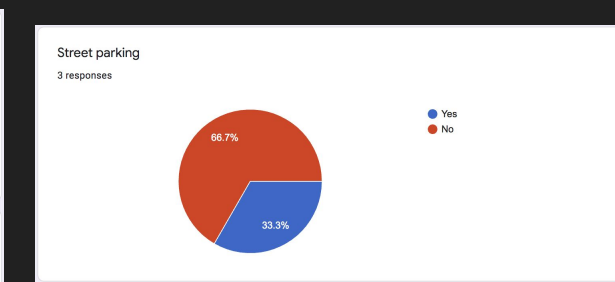
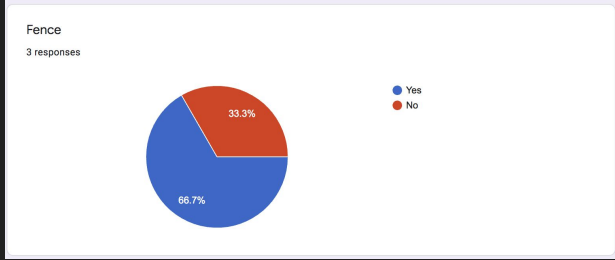
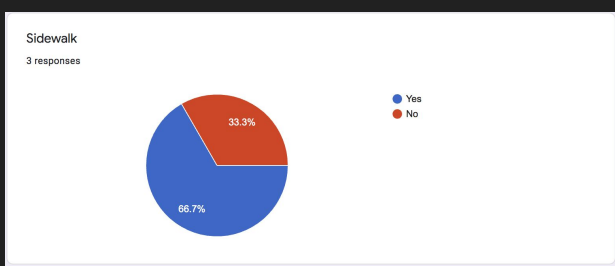
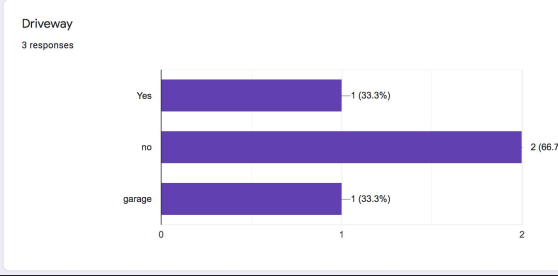


Vegetation (bushes/flowers)  
3 responses

8

6

2

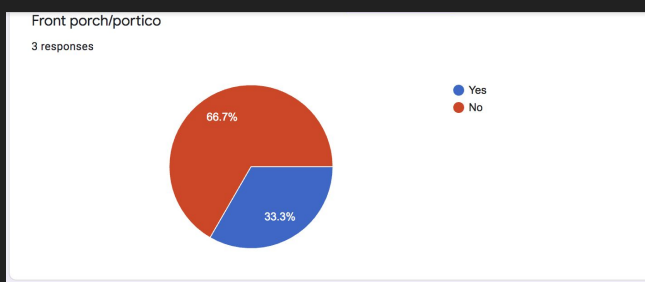


Comments/Notes  
3 responses

example 1

example 2

example 3



Tree(s), on property  
3 responses

5

2

4

Submitted 3 seperate examples.

Pie charts are available for easy to read graphics

A Google sheet is also created

# Conclusion

One of the desires is to investigate the findings in order to potentially set up smaller zoning areas of NENA (based on similar findings of front yard characteristics)

Since front yards are more public than other aspects, the use of technology and people can help to shorten survey questionnaires.

# NENA Quantifying Backyards and Alleys

AJ Ulrich, Colton Crum, Keith Engstrom, Brayden Scaggs



# Introduction of Contents

- ① Building Footprint and Yard Sizes
- ② Outbuildings Count and Type
- ③ Yard Orientation in Relation to Alleyways

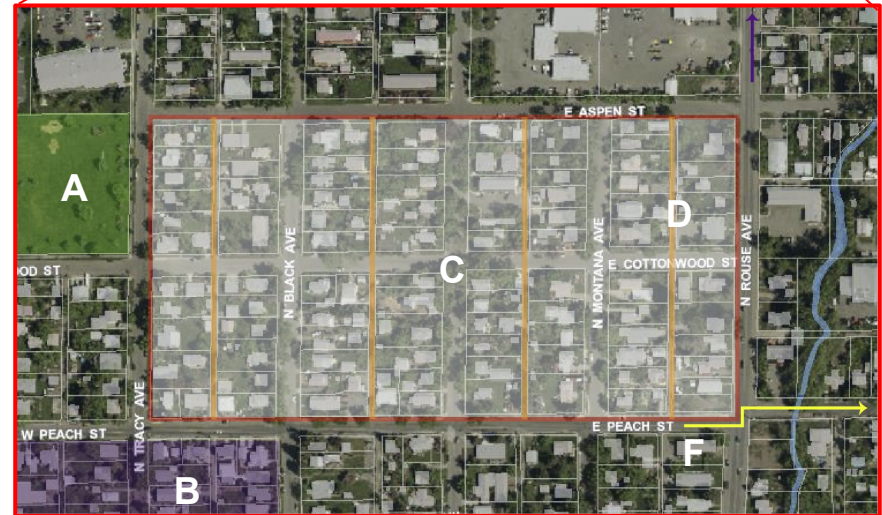
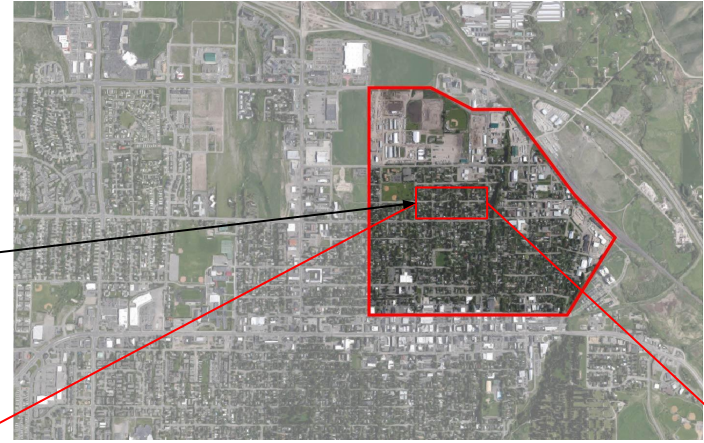
The intent is to introduce a series of strategies which clarify the characteristics and importance of each of the three focus points of this presentation. Allowing for a process to be developed and used in the future planning of the Northeast Neighborhood.

**BOZEMAN**<sup>MT</sup>



# Proposed Case Study Location

This location was chosen as the case study due to it being centralized between many different types of infrastructure.



Including:

- A - Open green space
- B - Historic District
- C - Residential neighborhood
- D - Through Alley's
- E - Nearby Stream
- F - Commercial District



# Building Footprint & Yard Sizes

BOZEMAN<sup>MT</sup>



The intent is to derive a Built : Open space ratio for each “division” within the North East neighborhood.

Once obtained, this information can be compiled onto a visual map where patterns may hopefully be identified and then used to inform an appropriate code restriction or possible incentives for new construction within each division to comply.

# Quantification Strategy

This process has been designed to be a group project for future Arch 452 students to complete.

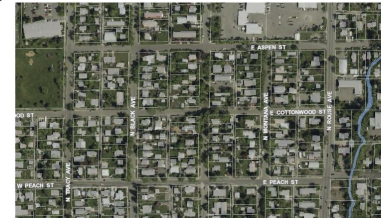
It is assumed that the North East neighborhood has already been divided into appropriate sections based on different neighborhood characteristics and/or adjacencies to relevant infrastructure.

One person in each group will then be assigned a division of the neighborhood, and complete the assignment, shown on the right, as a means of collecting data and identifying patterns of existing housing developments.

Collecting Built/Open Lot Space Ratios  
Group Assignment  
Research Methods / Arch 452

- 1) Begin by separating the neighborhood into predetermined divisions based on different neighborhood characteristics and/or adjacencies to relevant infrastructure. Each group member will be responsible for collecting data on one division, including identifying any other patterns which may stand out during the process.
- 2) Using Bozeman GIS capture a photo of each section with building footprints and lot lines overlaid.

Example:

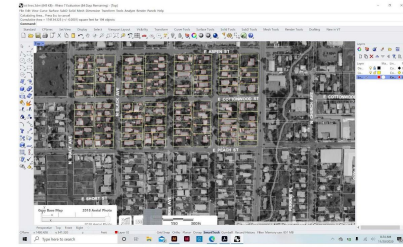


# Quantification Strategy

- 1 Using the information provided by the Bozeman GIS database, and the digital modeling program Rhino, we intend to quantify the Built : Open space ratio per division.
- 2 By using the overlays provided by GIS it is possible to bring an image from the database into Rhino with the overlaid building footprints, lot lines, and a scale.
- 3 Once the image is in Rhino, we can then trace the image lot lines and building footprints onto different layers and easily calculate the cumulative square footage for each.
- 4 Using those square footages, you can then derive the ratios of Built : Open space for each neighborhood division.

3) Using Rhino 5/6/7, place each of the images as a "background bitmap", and outline all buildings and lot lines onto 2 different layers. Careful not to outline cars or driveways.

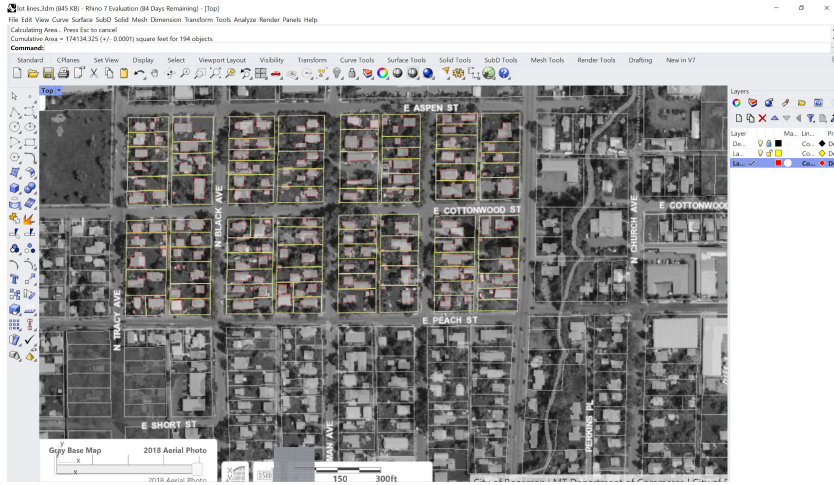
Example:



4) Once outlined, select all objects on one layer and use the area command to determine the cumulative area for all of the objects on that layer. Repeat for the next layer. Using this information, create a ratio for built vs. open yard space for each division.

Once each group member has finished, compile all of the information onto a map appropriately so it may be read easily.. Hopefully this allows existing patterns to be identified, and linked with surrounding neighborhood characteristics:(ex: buildings near the commercial district typically see less open yard space whereas centralized lots see approx 25% more open space..).This information can then be used to inform possible new development guidelines or code restrictions for future construction within the neighborhood.

# Building Footprint Case Study Results



Cumulative lot sq. ft: **767,437 sq. ft**

(-)

Cumulative built sq. ft. : **174,134 sq. ft.**

(=)

Open sq. ft.: **593,000 sq. ft.**

For this division of the neighborhood the Built : Open Space ratio comes out to approximately **1:4.4**.

Other notable qualities include gradually increasing built square footages as you move further East. (Hypothesis for this is the decreasing distance to the commercial district.)

Also a number of structures can be seen clearly crossing lot line boundaries.





# Outbuildings- Count /Type

Here we aim to quantify any number or type of outbuildings that exist in the neighborhood.

Types of Outbuildings we aim to document include guest houses, barns / tool sheds, gazebos, greenhouses, or separate garages.

By quantifying this information, it will create a baseline which can be used to set codes or restrictions to the communities allowable number and type of outbuildings per lot.



## Nena's Outbuilding Data Collection



Corner of East Cotton Wood St/ N Bogeyman Ave

Before conducting this walk through:

- Obtain permission from the local authorities and community associations for observation and documentation.
- It is recommended that you wear orange safety vest.

Outbuilding is :

A building, such as a shed, barn, or garage, on the same property but separate from a more important one, such as a house.

### Collection Assignment

1. What type of outbuilding is it?



Shed



Greenhouse



Gazebo



Barn



Garage

Other

2. What is the size of the building footprint?

A. Large

Above-501 sqft

B. Medium

500 sqft - 151 sqft

C. Small

150 sqft - below

3. Where in the yard is it located in relation to the dwelling?

A. Front

B. Side

C. Back

4. What is the approximate age of the structure?

A. New

1-3 years

B. Used

4-10 years

C. Old

11- above years

5. What is the overall condition of the outbuilding?

A. Whole / Clean

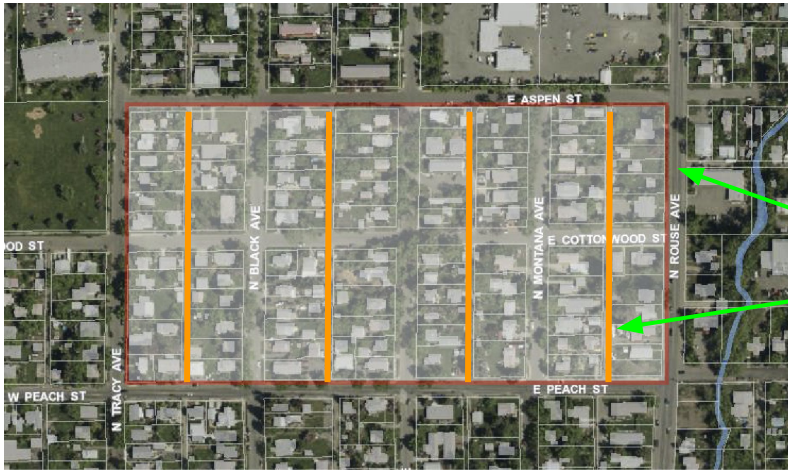
B. Worn

C. Tattered

# Data Collection Strategy

- 1 Collecting this data through neighborhood walking surveys would be the most effective way to gather this information for this percentage of the community.
- 2 By using a neighborhood walking survey the association would gather information faster and more accurately on what current outbuildings exist and what they are being used for.
- 3 Once collected the community can evaluate the size, type and number of outbuildings to understand the overall percentage of these structures in the neighborhood and the importance they play for this community.

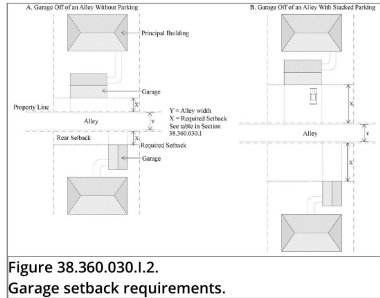
# Yard Orientation in Relation to Alleyways



Case Study Boundary  
Alleys

The goal is to identify the interaction between the backyard space based on orientation to the adjacent alleyway.

Examining the relationship between alleyways and yard orientation between new and old developments. These aspects begin to show the interspatial relationships that form based off of how the yard addresses the alleyway. Creating a community development plan which can influence how new developments utilize the alleyway.



Alley Right-of-Way Width	Setback for Garage without Stacked Parking	Setback for a Garage with Stacked Parking Off of an Alley
30 feet	6 feet	20 feet
20 feet	6 feet	24 feet
16 feet	8 feet	28 feet
14 feet	10 feet	30 feet

Examining the standard requirements in new construction comparing them to the existing conditions. Taking the two ways of addressing the yard to alley context in development and finding a middle ground.

Figure 38.360.030.I.2.  
Garage setback requirements.

# Quantification Method

- ① -Obtain permission from the local authorities and community associations for observation and documentation.
- ② -Create a standard itemized list of key characteristics in which all affiliated group can use as a guide for the observation and documentation.
- ③ -Approach documentation through in-person outreach. Taking photographs, creating sketches, and compiling notations.
- ④ -Compare the in-person documentation with what is available through public records and online geographic/social data
  - Using software such as: Social Explorer, Montana Cadastral, Google Maps, and Bozeman GIS
- ⑤ -Mesh the documentation collected through in-person outreach as well as online.
  - Using software such as: Rhino, Illustrator, Indesign, and Photoshop
- ⑥ -Compile all documentation thus far collected into a presentable report that can be given to community members as a standalone document or presented at meetings.



# Key Characteristics

Alleyways help divide and define relationships among neighbors. Determining yard form and how vehicular traffic/pedestrian traffic enter each plot. Thus identifiable characteristic should be focused upon as listed below.

-Identifying setbacks, looking at where the backyard begins. This can be calculated through acknowledging dividing elements or out buildings that separate the house from the alleyway.

-How does the yard conform to the alleyway? Does the width of the alley implement a new set of dimensions in relation to the yard?

-Look at what building are constructed along the alley and what does their influence carry. In regards to means of access and how the yard to alley relationship begins to adapt/change as a result of the built environment.

-Examine the surrounding vegetation between the yards and alleyways. How does scale and type change? Does this change impact how backyards interact with the alley making some areas feel open and welcoming while other secluded and cutoff?





# Social Use of Spaces: Alleyways

Kazi Tahsin Huda


Kelli Littleton

Nic Boteilho

Richard Wagner

# Focusing Points

- Permeability
  - *is it inviting?*
  - *boundary types?*
- Traffic flow
  - *type of traffic using the alleys and how?*
  - *is the traffic flow bringing in life or damaging it?*
- User Activity
  - *What is happening adjacent to the alley?*
  - *How does each parcel activate the alley?*



# Cooperative Assignments for Moving Forward

## ▣ ARCH452

- Group-based assignment
  - Each group takes a region of NE Neighborhood
- Collect data on three focus points for alleyways around NE neighborhood
  - Using provided resources packed

## ▣ GIS Course/Ind. Studies

- Input collected data to GIS for in-depth description of current alley conditions
- Make data available for resources aiding preservation/development

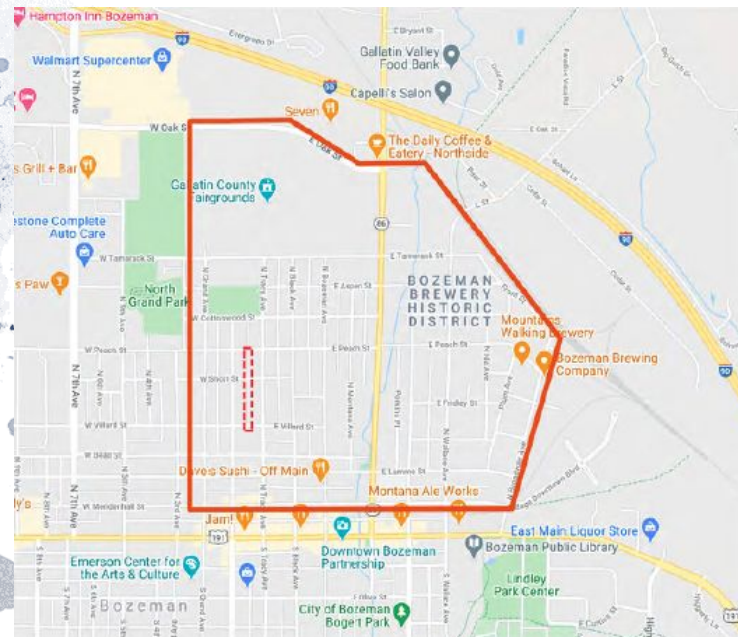


## Bozeman City Code - Boundary Permeability

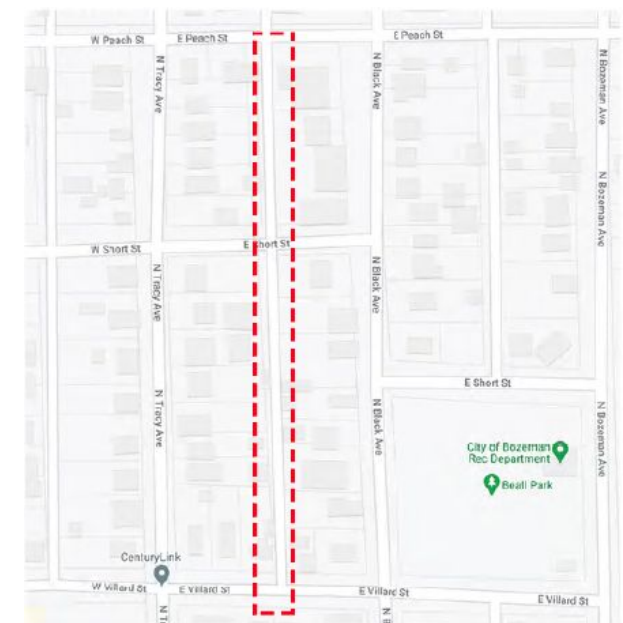
“Fences located within the Neighborhood Conservation Overlay District must be constructed of wood, wrought-iron, or any other non-synthetic material and all ‘transparency’. No chain link fencing is allowed within the Neighborhood Conservation Overlay District.”

# Case Study: Black & Tracy

NENA Boundary



Case Study Boundary

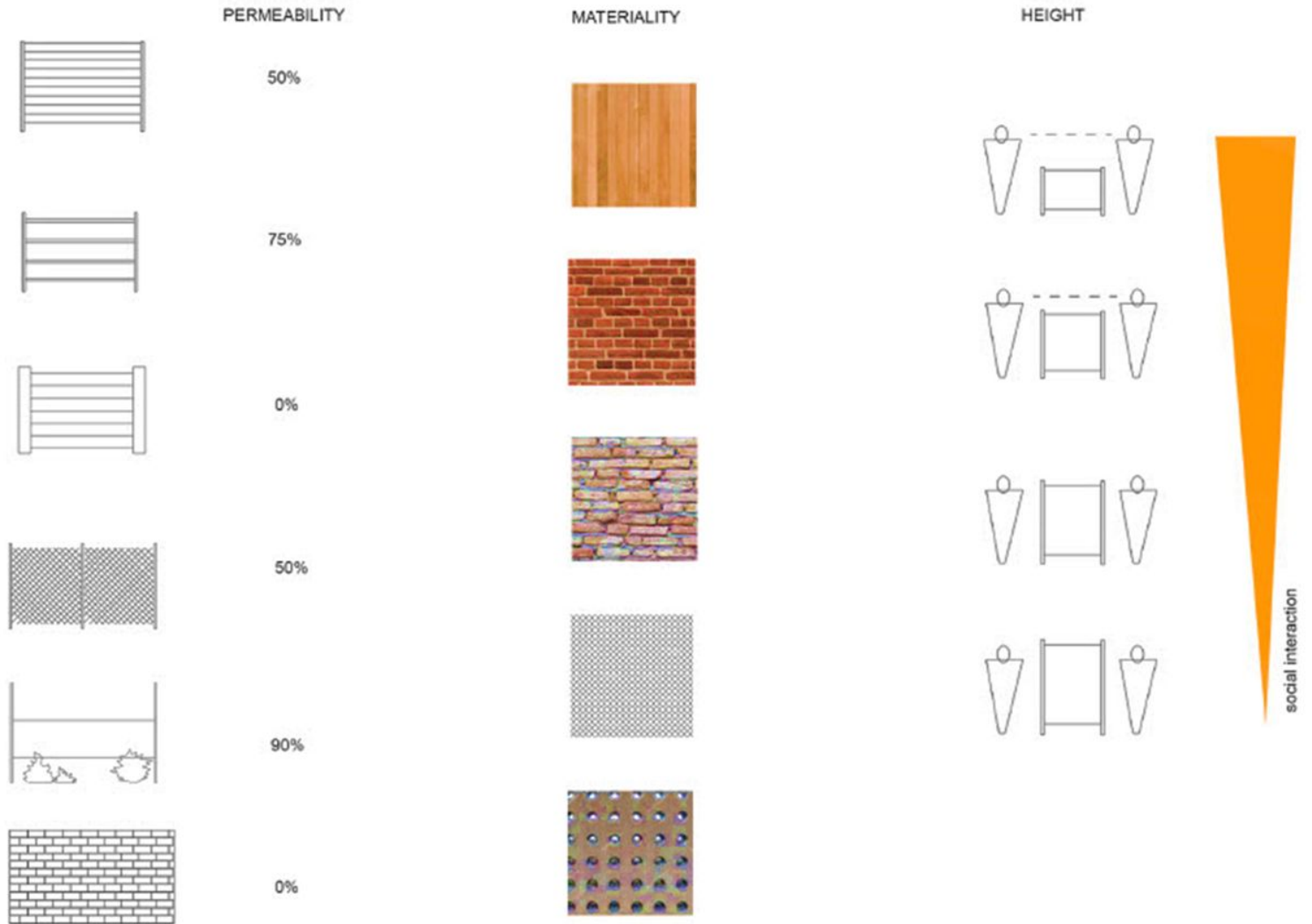


# Observation Inventory



# Permeability

## Alley Character inventory: Defining Boundary Permeability





# Permeability

## 2. Boundary Analysis Tool

Alley Location	Primary Boundary Material	Avg. Boundary Height	Setbacks?	Vegetation?	Aligned with neighbor's boundary?	Presence of Private/Public Engagement	Overall conclusions
Black & Tracy	Wood Slat, Vegetation	3' - 4'	Zero Lot Line, 5', 10', 15'	Yes - along /within fenceline where fence is present	No - Consistently irregular boundary lines bordering alley	Yes - 'free' bike air installation open to public	Irregular boundary setbacks allow for movement/dynamic social functions along alleyways

# Traffic Flow

## Traffic Flow Data Collection Sheet

Alley Location: **Black & Tracy**  
Day: **Tuesday**  
Time: **1 PM to 3 PM**

Use the following space to tally how many vehicles are using the alley for a **thorough movement**. Use the proper columns to identify the number of vehicles for the different types of vehicles.



Passenger Cars (Example Sedans, vans, trucks etc.)	Trucks (Example delivery trucks, Uhauls etc.)	Bicycles	Pedestrians	Total Traffic
///		/// //		15
<b>Total: 5</b>	<b>Total:</b>	<b>Total:10</b>	<b>Total:</b>	

Use the following space to tally how many vehicles are using the alley to **access the adjacent properties of the alley**. Use the proper columns to identify the number of vehicles for the different types of vehicles.














































Passenger Cars (Example sedans, vans, trucks etc.)	Trucks (Example delivery trucks, Uhauls etc.)	Bicycles	Pedestrians	Total Traffic
///			/// // //	20
<b>Total: 5</b>	<b>Total:</b>	<b>Total:</b>	<b>Total: 15</b>	

# Quantify Activities

## USE OF SPACE & SOCIAL FUNCTION | ALLEYS

	 <b>Qualitative</b> List of activities taking place. How is the alley being used (main access, storage, shed/garage access, trash disposal)	 <b>Quantitative</b> Document hours high and low activity and relate back to type of activity.
<b>Information</b>		
<b>User Behavior</b>		
<b>Art/Skunk/Quirkiness</b>	Categorize by: Mural, Installation, Yard Piece.	Count overall size/area of presence on each parcel. Number of pieces on each parcel. Total for overall alley.
<b>ADU/Sheds/Garages with alley access.</b>	What is the secondary structure being used for? How often is it occupied?	Size of structure in relation to the individual parcel. Total area of square footage present adjacent to alley.
<b>Traffic Flow</b>	Type of traffic: Pedestrians, cycling, utility traffic such as waste pick up and city use, vehicular. Rate if high traffic flow has brought life to the alley or damaged it.	Number of vehicles to each parcel. Clocking peak and low activity. Time of usage for waste and utility services. Would identify if alleys are used for parking, and/or for thorough movements. Would be useful if alleys are to be developed as livable streets (also depends on other uses).
<b>Activity Mapping</b>	Who is doing what? List of what is adjacent to the alley or each property (yare space, garden, flower beds, sheds).	Number of parcels that activate the alley. Setback between alley and present activity.
<b>Proximity to Public Space</b>	What type of public space is accessible to each parcel by means of the alley. How does it feel (restricted or welcoming). Would help to connect qualitative information with physical characteristics and hence help in preserving character using physical properties.	Distance of alley travel from each parcel to the public space.
<b>Alley Locations &amp; Dimensions</b>		Measure true width and length. Measure actual setbacks of each parcel. Note the lighting present. Number of parcel accesses.
<b>Permeability</b>	Is it inviting? Material list of alley objects such as fences and type of surface/paving. Type of boundary conditions to the parcels (open vs fence).	Count number of enclosed parcels. Total square footages of private hardscapes etc. Area of solid fencing vs visually open boundaries.

## MEANS OF GATHERING DATA

	<b>Observation</b>  	<b>Creation of Site map GIS &amp; Google Earth</b>  	<b>Survey</b>  	<b>Records</b>  	<b>Institute of Transportation</b>  
Help to identify if few of the alleys are used for art, are/or graffiti. This would allow to identify the potential of alleys to be used as an art corner for the neighborhood.	 	 	 		
	 	 			
	 	 			Observation. Institute of Transportation Engineers (ITE) at MSU have experience of traffic counting and traffic data collection. They can help if needed.
	 	 	 		
		 			
	 	 		 	
	 	 			

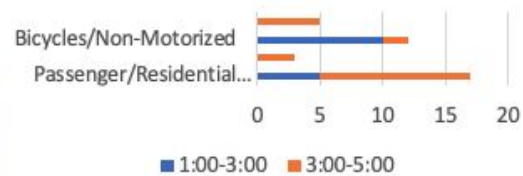


# Potential Product

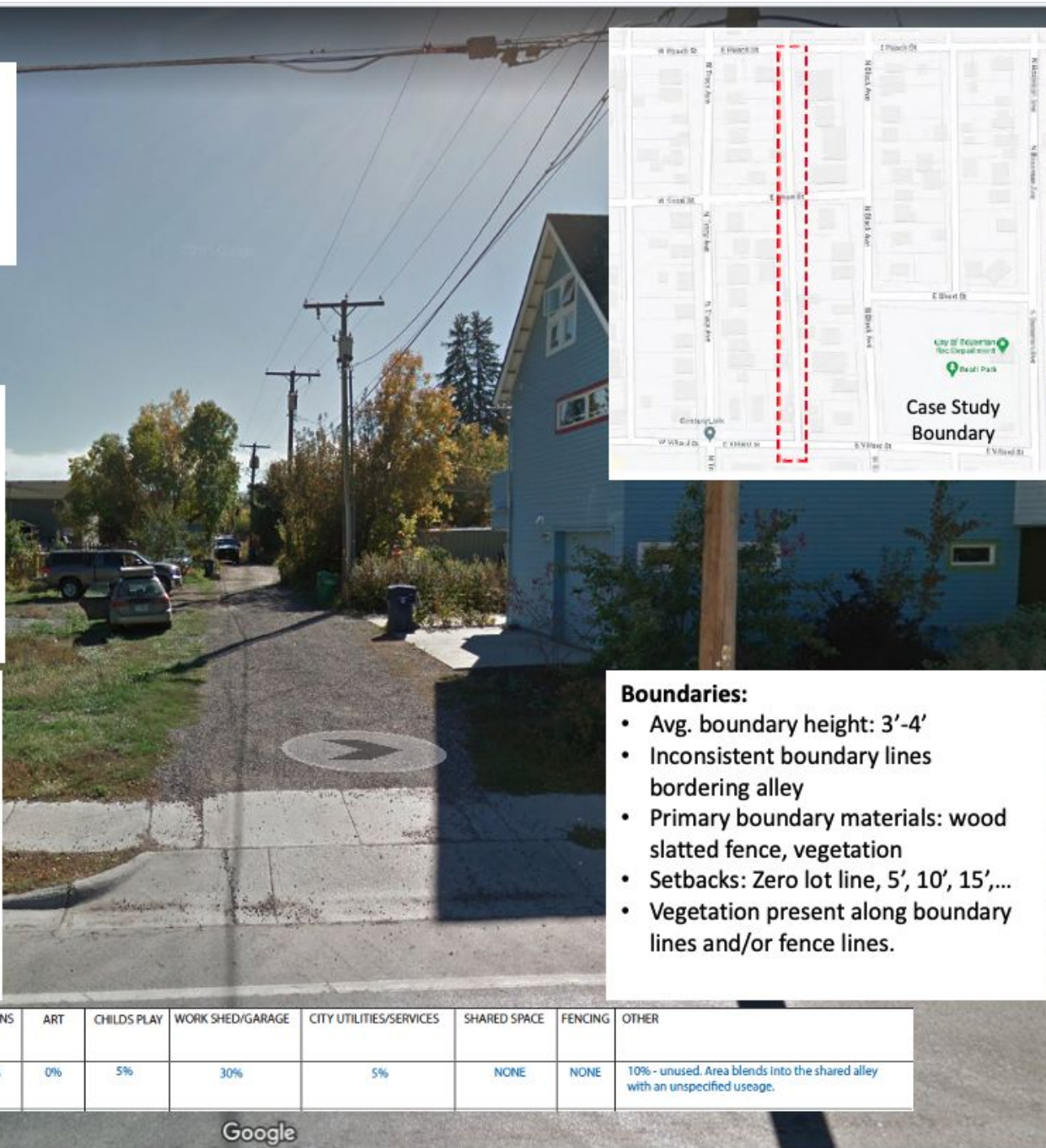
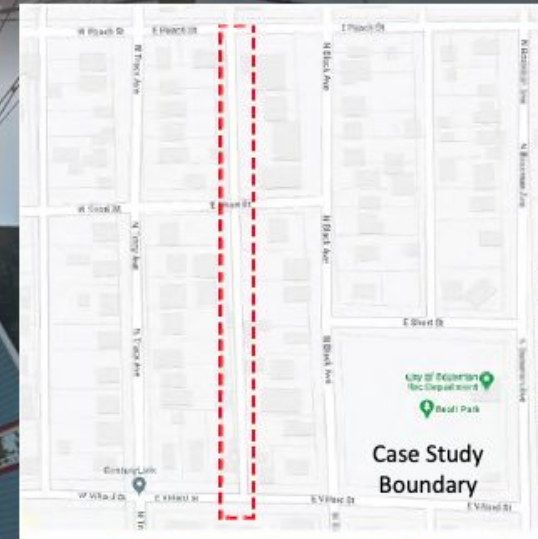
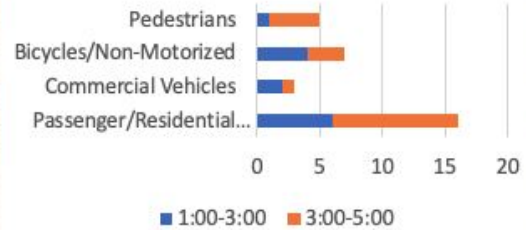
## Report on Attributes of Social Uses of Alleys

### Case: Black & Tracy

#### Through Traffic Activity: Black & Tracy (Tuesday)



#### Traffic in Alley to Access Adjacent Properties



#### Boundaries:

- Avg. boundary height: 3'-4'
- Inconsistent boundary lines bordering alley
- Primary boundary materials: wood slatted fence, vegetation
- Setbacks: Zero lot line, 5', 10', 15',...
- Vegetation present along boundary lines and/or fence lines.

PARCEL #	ACTIVITY LEVEL 1-5 1= NOT ACTIVE 5= HIGHLY ACTIVE	OPEN YARD SPACE	GARDENS	ART	CHILDS PLAY	WORK SHED/GARAGE	CITY UTILITIES/SERVICES	SHARED SPACE	FENCING	OTHER
LOT A	4	20%	30%	0%	5%	30%	5%	NONE	NONE	10% - unused. Area blends into the shared alley with an unspecified usage.

# Next Steps

The data gathering tools developed for this class will be implemented into other courses next semester including:

ARCH 452: Architecture Research Methods with Prof. Susanne Cowan

GPHY 365: Geographical Planning by Prof. Sarah Church

GPHY 492: Independent Study in GIS with Nick Fox

