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
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.nenabozeman.org](http://www.nenabozeman.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.
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](https://tinyurl.com/bozeman-nena-survey)
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

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?
- 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)
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)
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 Photosources 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

<table>
<thead>
<tr>
<th></th>
<th>I feel driven to participate in community activities.</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I can influence the decisions that are made by the lawmakers in my community.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
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<tr>
<td>2</td>
<td>I want my neighborhood to change.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
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<td>3</td>
<td>I feel like my neighborhood is changing in the right direction.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
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<td>4</td>
<td>I would consider moving because of changes in the neighborhood.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
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<tr>
<td>5</td>
<td>I want my neighborhood to change at a slower pace than is currently happening.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
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<td>6</td>
<td>In my opinion, change in my neighborhood should:</td>
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<td></td>
<td>Not at all</td>
<td>Strongly Agree</td>
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<td>Disagree</td>
<td>Strongly Disagree</td>
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<td></td>
<td>Directed outside of NENA</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
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<td></td>
<td>Include commercial businesses</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
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<td></td>
<td>Be less density/infill driven</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
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<td></td>
<td>Allow larger homes to replace smaller homes, as long as the front yard space is maintained</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
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<td>Include additional trail systems</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
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<td>Provide more options for lower income and multi-family housing</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
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<td></td>
<td>Allow for more ADU's (Additional Dwelling Units)</td>
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<td>Agree</td>
<td>Neutral</td>
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<td>Include more small maker space/artisan spaces</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neutral</td>
<td>Disagree</td>
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<th></th>
<th>I find the reason I don't participate in my community is:</th>
<th>Strongly Agree</th>
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<th>Neutral</th>
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<td>Don't know how to do it</td>
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<td>I don't own property</td>
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<td>Inconvenient times and places</td>
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<td>Desire to keep things the way they are</td>
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<td>14</td>
<td>Physical or health limitation</td>
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<td>I don't have an interest or I am indifferent</td>
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<td>What do you think makes this neighborhood unique?</td>
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<td>What is missing in the neighborhood?</td>
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<td>12</td>
<td>If changes are made in NENA, what would you like to see changed or remain the same?</td>
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<td>12</td>
<td>In the space provided, please tell us any other opinions or concerns</td>
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</table>
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.
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? 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
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.
Submitted 3 separate 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.
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
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.
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 use 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.
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.

Data Collection Strategy

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
Yard Orientation in Relation to Alleyways

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.
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 groups can use as a guide for the observation and documentation.
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
### Data Collection Packet

**Boundary Analysis Tool**
- Gauging alley boundary permeability

**Traffic Flow Collection Sheet**
- Use of alley space by categorical methods of transportation

**Activity Matrix**
- Use of space & social function at property line adjacent to alley
Case Study: Black & Tracy

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.”
Observation Inventory
Permeability
2. **Boundary Analysis Tool**

<table>
<thead>
<tr>
<th>Alley Location</th>
<th>Primary Boundary Material</th>
<th>Avg. Boundary Height</th>
<th>Setbacks?</th>
<th>Vegetation?</th>
<th>Aligned with neighbor's boundary?</th>
<th>Presence of Private/Public Engagement</th>
<th>Overall conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black &amp; Tracy</td>
<td>Wood Slat, Vegetation</td>
<td>3’ - 4’</td>
<td>Zero Lot Line, 5’, 10’, 15’</td>
<td>Yes - along /within fence line where fence is present</td>
<td>No - Consistently irregular boundary lines bordering alley</td>
<td>Yes - 'Tree' bike air installation open to public</td>
<td>Irregular boundary setbacks allow for movement/dynamic social functions along alleys</td>
</tr>
</tbody>
</table>
### Traffic Flow Data Collection Sheet

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.

<table>
<thead>
<tr>
<th>Passenger Cars (Example: Sedans, vans, trucks etc.)</th>
<th>Trucks (Example: Delivery trucks, U-hauls etc.)</th>
<th>Bicycles</th>
<th>Pedestrians</th>
<th>Total Traffic</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Traffic Icons" /></td>
<td><img src="image2.png" alt="Traffic Icons" /></td>
<td><img src="image3.png" alt="Traffic Icons" /></td>
<td><img src="image4.png" alt="Traffic Icons" /></td>
<td>15</td>
</tr>
</tbody>
</table>

Total: 5  
Total: 10  
Total: 15

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.

<table>
<thead>
<tr>
<th>Passenger Cars (Example: Sedans, vans, trucks etc.)</th>
<th>Trucks (Example: Delivery trucks, U-hauls etc.)</th>
<th>Bicycles</th>
<th>Pedestrians</th>
<th>Total Traffic</th>
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<td><img src="image3.png" alt="Traffic Icons" /></td>
<td><img src="image4.png" alt="Traffic Icons" /></td>
<td>20</td>
</tr>
</tbody>
</table>

Total: 5  
Total: 15  
Total: 20
### Use of Space & Social Function @ Property Line Adjacent to Alley

Utilize the following diagram to quantify the activity taking place on individual parcel property lines within the specified alley. Separate the type of activity into a percentage of the total property line space in the alley.

(See Lot A for example study)

<table>
<thead>
<tr>
<th>PARCEL #</th>
<th>ACTIVITY LEVEL 1-5</th>
<th>OPEN SPACE</th>
<th>AGRICULTURE</th>
<th>ART</th>
<th>CHILDREN</th>
<th>WORK SHOP / STORAGE</th>
<th>CITY UTILITIES / SERVICES</th>
<th>SHARED SPACE</th>
<th>FENCING</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOT A</td>
<td>4</td>
<td>20%</td>
<td>30%</td>
<td>0%</td>
<td>5%</td>
<td>30%</td>
<td>2%</td>
<td>NONE</td>
<td>NONE</td>
<td>10%</td>
</tr>
</tbody>
</table>

User Activity
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.

Potential Product
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