

NAVIGATING GOOGLE STREET VIEW

A Guide to Conducting Audits of the Built Environment Using Google Street View

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SAINT LOUIS
UNIVERSITY

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SECTION I

OVERVIEW

New research supports using high-resolution omnidirectional imagery to provide a visual record of built environment characteristics which may support more efficient and extendable alternatives to field-based observational surveys. Omnidirectional imagery refers to the simultaneous collection of images in multiple directions from a single location, producing a panoramic view. This imagery provides a permanent visual record of an area and allows the viewer to virtually walk or drive through a community to observe characteristics that are included on many built environment audit instruments. The coverage and availability of this type of imagery is increasing at a rapid pace. For example, Google Street View debuted on the Internet in May 2007 with coverage in five American cities (San Francisco, New York, Las Vegas, Denver, and Miami). As of June 2011, Street View imagery was available in over 34 countries. Coverage has also expanded to thousands of miles of roads in smaller towns and rural areas. All of this imagery is freely accessible to anyone with a high-speed Internet connection.

PURPOSE

This manual is designed to provide easy-to-use training materials for using Google Street View to view and audit the built environment. This is currently designed and tested for use in physical activity and public health research; however, these methods are compatible/transferrable to other fields.

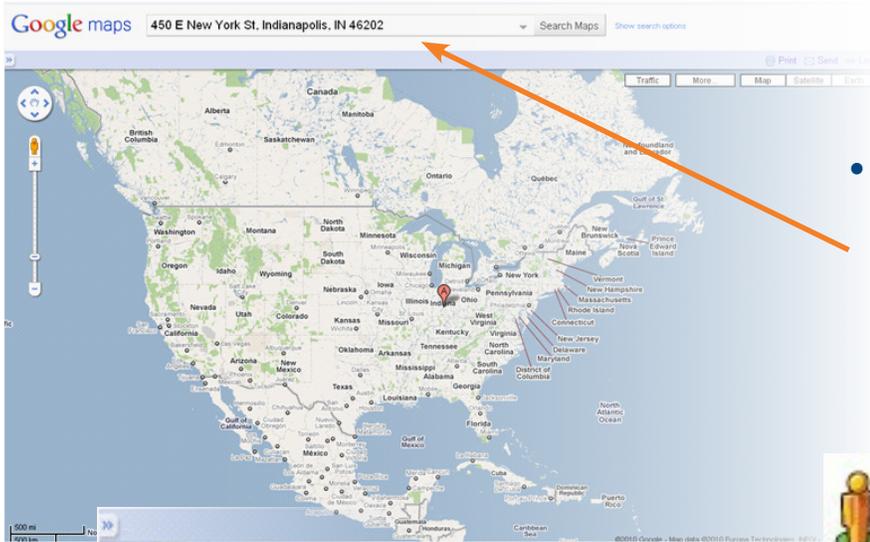
Goals of the Manual

1. Learn to navigate a map using Google Street View
2. Apply Google Street View

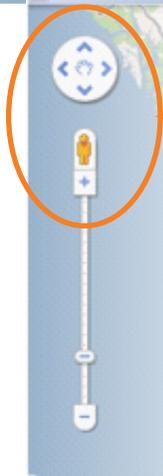
SECTION 2

Accessing Google Maps

- **STEP 1:** Open Internet browser. Access the Google Maps website at <http://maps.google.com/>.

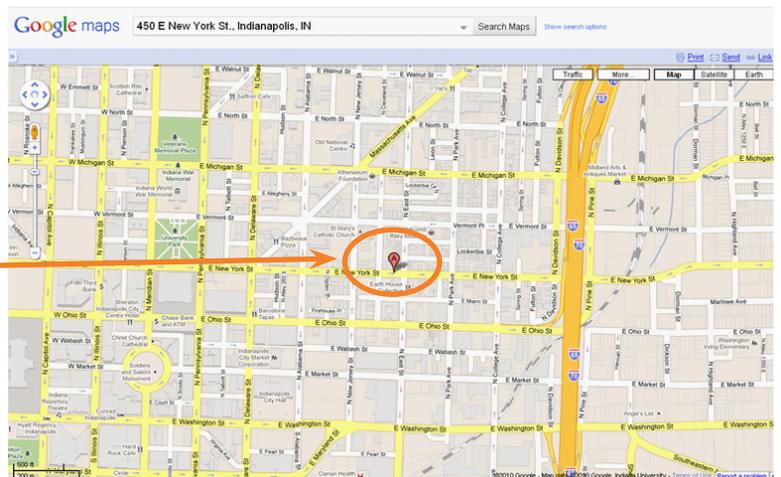


- **STEP 2:** Enter a street address into the search bar at the top of the page (e.g., 450 E New York St., Indianapolis, IN). You can also enter a single street or street intersection with a state or zipcode.



Tip: If Pegman, a tiny yellow man who can be moved along the segment to aid navigation of the image, does not appear, this street may not have imagery available.

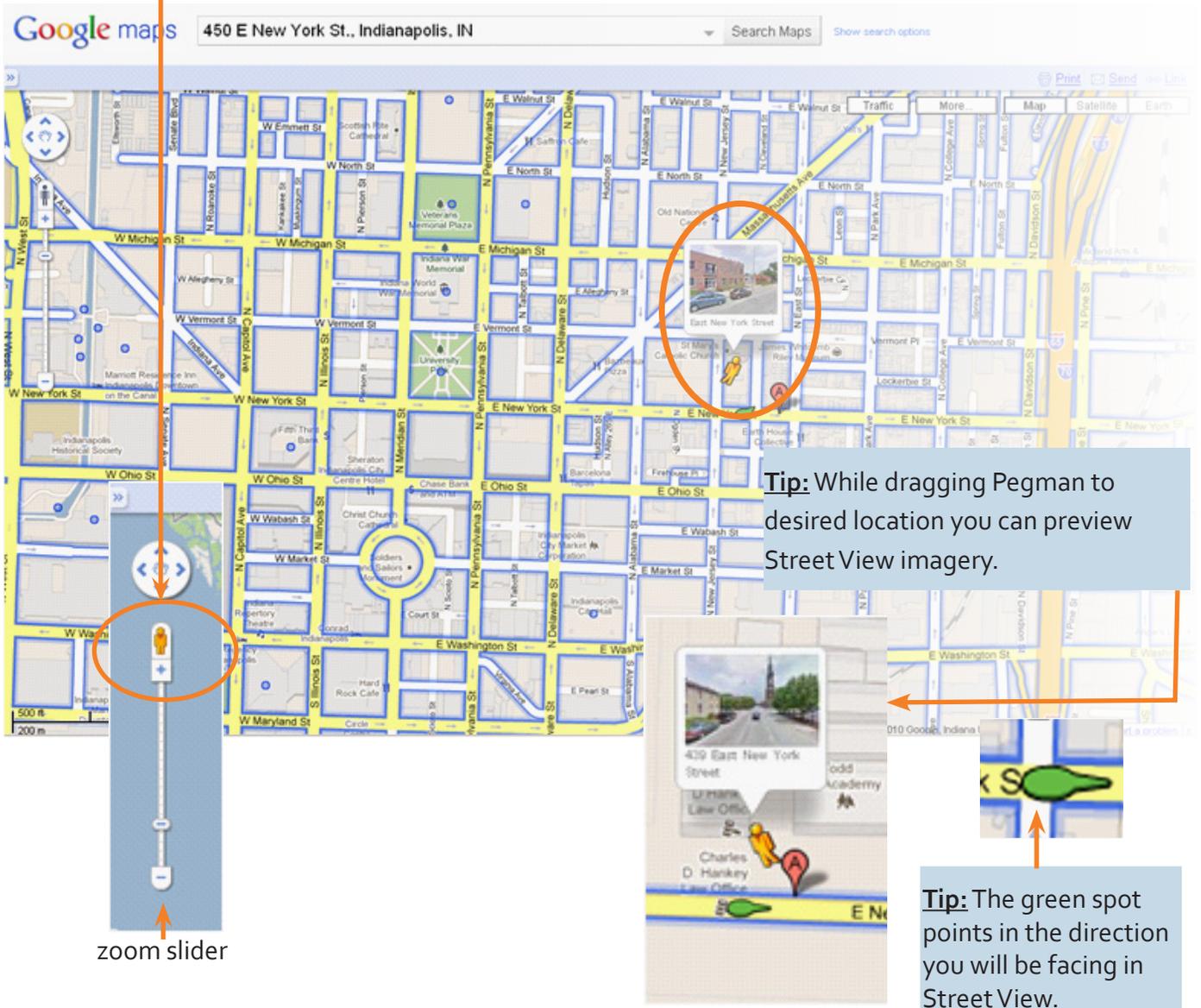
A map will be returned with a red letter "A" to mark the location of the address.



Entering Google Street View

STEP 1: Click the Pegman at the top of the [zoom slider](#) and place him at the start of the segment.

Tip: If imagery is available, the street will be highlighted in blue as you move the Pegman to the street.



Tip: Another way to enter Street View imagery is to zoom in to the lowest level by either double-clicking the mouse on the image or clicking the "+" at the top of the zoom slider.

Example Street View Image

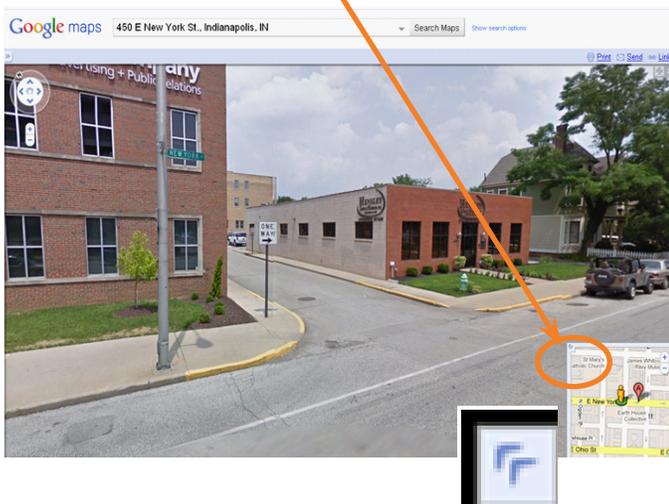


Tip: Map view shows your location on map.

Navigating Google Street View

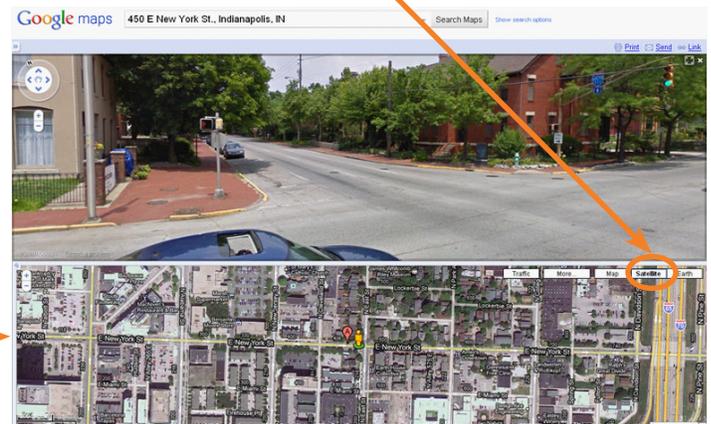
Finding Your Place

- **STEP 1:** Expand map view at bottom right of screen by clicking double arrows at the top left of map view in the lower right corner of screen. This will help to provide awareness of surroundings.



Tip: This view is useful to identify segment characteristics, such as, land use features and sidewalk continuity.

- **STEP 2:** Click "Satellite View" to get an initial view of the street segment. This will help you orient yourself in the direction you are facing and identify boundaries and important landmarks.

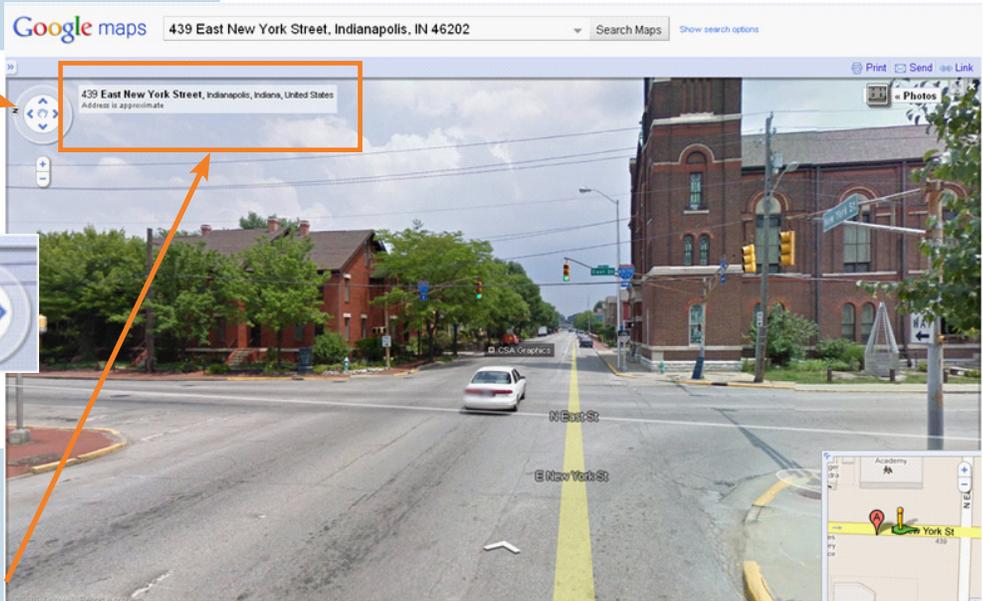


- **STEP 3:** Click double arrows in the corner again to minimize screen and return to full Street View Image.

Tip: The image can be rotated to view different angles by moving the mouse around the screen using the scroll ball.

Tip: The scrollball always shows which direction is north.

Tip: Make sure to look at the address on the map in the upper left hand corner to make sure the correct segment is in view.



To Move Around

- **STEP 4:** Begin navigating the image by clicking the white arrows to move up one side of the street and down the other side.

To move forward

- Click the forward pointing white arrow with the cursor.
- OR double-click the screen with your mouse.

To move right or left

- To move right or left you must be at an intersection only.

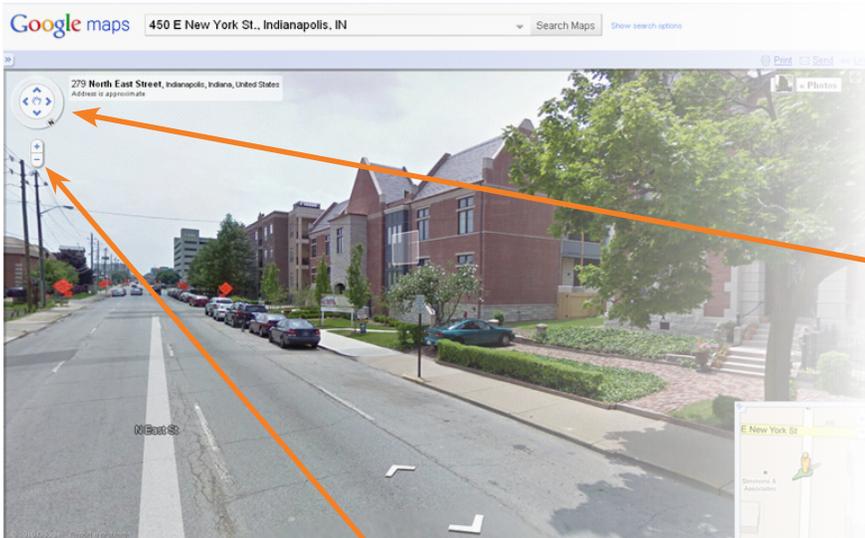
To move backward

- Click the back white arrow with the cursor.



To Look Around

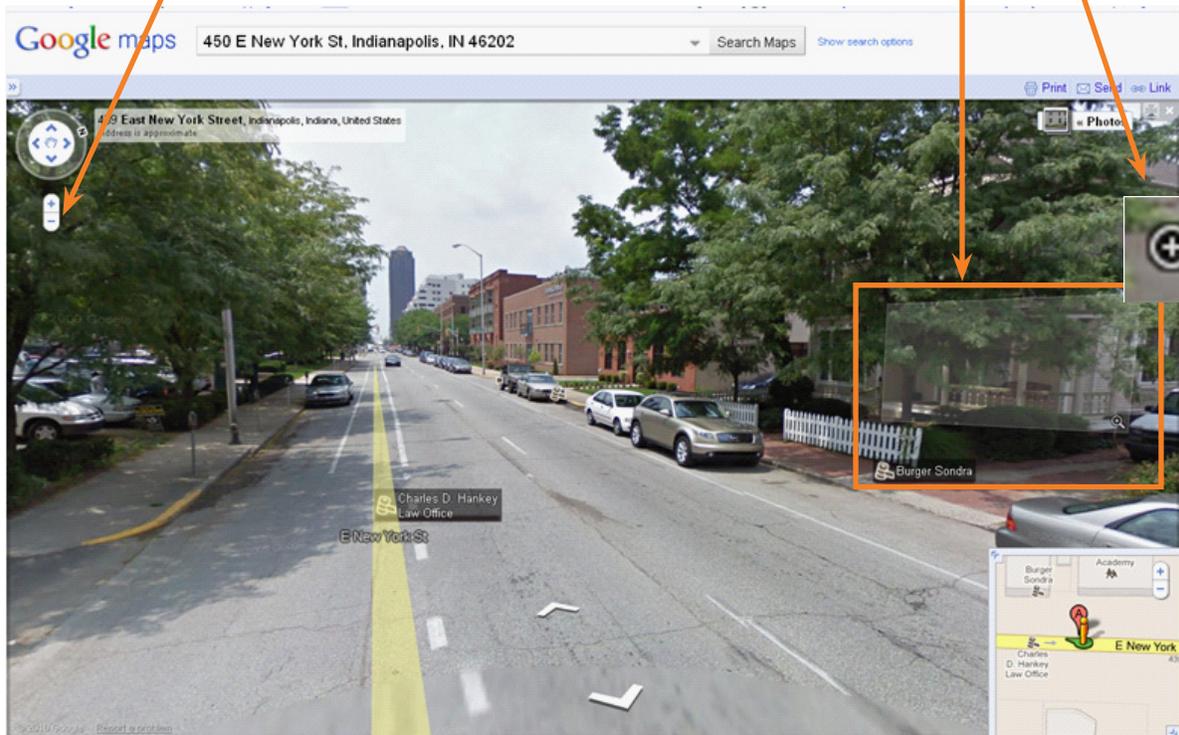
- **STEP 5:** Carefully observe the environment of the segment by rotating the image to look up, down, and around the street to see all features present.



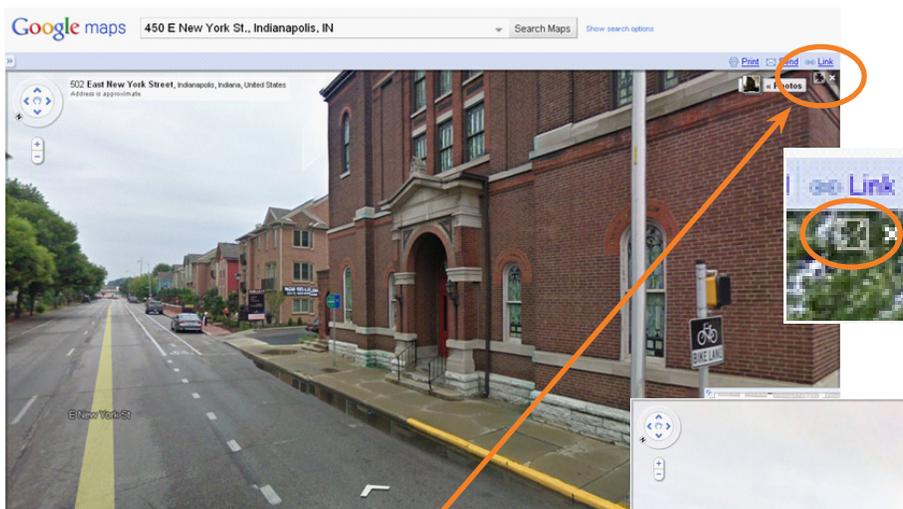
Tip: View left or right using the scroll ball at the top of the screen or clicking and dragging to the direction you would like to view.

Tip: The image can be further zoomed in (+) or out (-) by using the zoom slider on the left-hand side of the imagery.

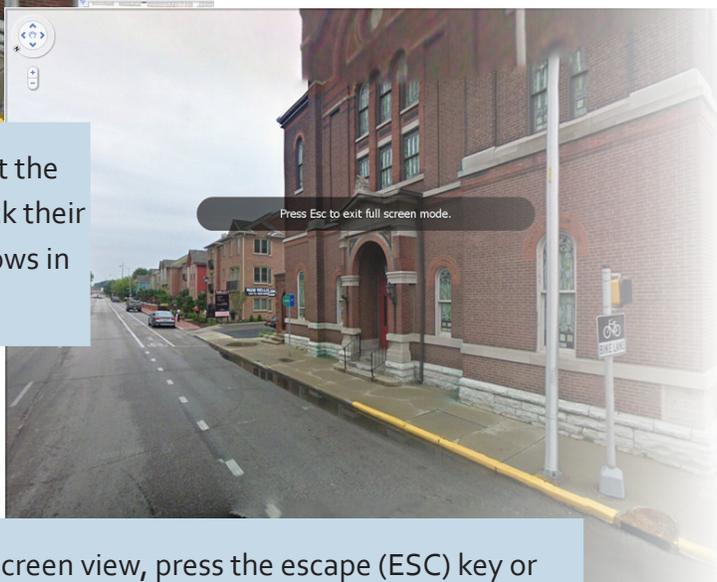
Tip: When facing right or left, a highlighted box will appear with a magnifying glass on imagery that can be zoomed in further. The image can be zoomed in by simply double-clicking on a specific feature or location on the imagery with this box.



Additional Tips and Tricks



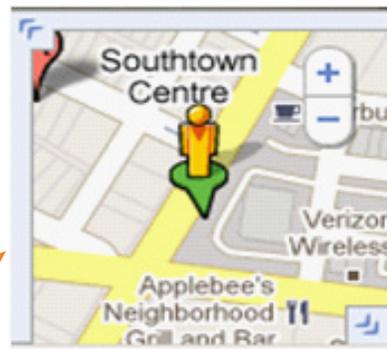
Tip: If the observer prefers a full screen without the address bar and other features, which may block their view, they can click on the square with four arrows in the upper right hand corner.



Tip: To exit full screen view, press the escape (ESC) key or zoom out until it says you are leaving Street View.

Tip: If the image appears blurry, use the zoom out feature to improve the view.

Tip: If you get lost in the image, pull out the box in the lower right hand corner of the map to view a full map. From here, you can see your current location or re-click the address bar to return to the start point.



**Minimized Full Map Box
"MiniMap"**

SECTION 3

Applications

Collecting observational measures of built environment characteristics that are important for physical activity and related health outcomes is a challenge faced by communities, practitioners, and researchers. This is particularly problematic if data are needed across large areas, in multiple locations separated by large geographic distances, or at multiple points in time to support longitudinal comparison. Google Street View can be utilized to minimize this challenge. Navigating through the imagery, many of the built environment characteristics can be reliably observed.

Identifying Built Environment Characteristics

Tips for applying Google Street View to identify environmental audit characteristics.

Land Use

- Panning back and forth down the street/segment using the white arrows will help to identify whether the area is residential or commercial.
- Street View will often provide building labels which helps identify the building's purpose.
- Using satellite view, you can identify majority land use characteristics (i.e. residential vs. commercial).

Street Characteristics

- Zoom in and out using the zoom slide bar or double click to get closer views of street characteristics.
- Satellite view can be helpful in identifying characteristics, such as, number of street lanes, crosswalks, and traffic calming devices.

Pedestrian Friendly

- Satellite view can be helpful in identifying how much traffic is present, which could influence how safe it feels to walk or bike on the street.
- This view is also helpful when assessing if sidewalks are present and if the sidewalks are continuous.

Quality of the Environment

- Use the zoom feature to search for amenities, such as benches, drinking fountains, and public art. It is also helpful when looking for graffiti or barred windows.

Further Information

Further information on navigating Google Street View can be viewed in a short video on the Google help page: <http://maps.google.com/support/bin/answer.py?hl=en&answer=68381>.

Contact Information

Jeffrey Wilson, PhD
Associate Professor and Chair
IUPUI Department of Geography
Phone: (317) 274-1128
Email: jeswilso@iupui.edu

Cheryl Kelly, PhD
Assistant Professor
University of Colorado Department of Health Sciences
Phone: (719) 255-4466
Email: ckelly6@uccs.edu

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