

Microscale Audit of Pedestrian Streetscapes (MAPS): Data Collection & Scoring Manual*

Kelli L. Cain, M.A.
Rachel A. Millstein, M.A.
Carrie M. Geremia, B.A.

University California San Diego
San Diego State University
Healthy Environments Research and Action Center (HERA)
James F. Sallis Active Living Research Center (ALR)

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Revised: 2009 to adapt tool for the Neighborhood Impact on Kids (NIK) Study and the Teen Environment and Neighborhood (TEAN) Study. A few minor modifications were made to the tool related to children and teens.

(NIK; NIEHS R01 ES014240; PI: Brian Saelens; Co-investigators: James Sallis, Karen Glanz, Lawrence Frank, Sarah Couch).

(TEAN; NHLBI R01 HL083454; PI: James Sallis; Co-investigators: Terry Conway, Jacqueline Kerr, Lawrence Frank, Brian Saelens, Karen Glanz).

Revised: 2008 to adapt for Senior Neighborhood Quality of Life Study. Tool largely redesigned pulling heavily from the PRC-HAN tool. Destination-driven, route-based data collection protocol developed. (NIH: NHLBI R01 HL077141; PI: Abby King; Co-investigators: James Sallis, Terry Conway, Lawrence Frank, Brian Saelens).

Original tool and protocol developed in 2003 for the Neighborhood Quality of Life Study (NIH: NHLBI R01 HL67350; PI: James Sallis; Co-investigators: Brian Saelens, Lawrence Frank, Terry Conway, Don Slymen).

*This MAPS manual was created based on the cumulative experience of our research team conducting audits of the microscale pedestrian environment since 2003. The creation of the data scoring procedures has been a substantial effort that was led by Rachel Millstein. Carrie Geremia is our master trainer who has trained and certified numerous data collection teams and coordinated MAPS data collection from over 1500 participants. Kelli Cain was the project manager on the NIH grants that supported the development of the data collection protocol, adaptation of the tool, development of training materials/certification procedures, and the reliability and validity studies. She was closely involved in all of the stages of MAPS development that led to this comprehensive manual.

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For questions, contact Kelli Cain @ kcain@ucsd.edu



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Data Dictionaries

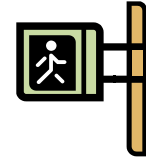
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A. Development of Instrument



1. Theoretical components

“Microscale” factors of the built environment differ from macro-level design elements such as street connectivity and residential density and include details about streets, sidewalks, intersections, and design characteristics (e.g., road crossing features, presence of trees, bicycle lanes, curbs), as well as characteristics of the social environment (e.g., stray dogs, graffiti, trash) [Sallis 2011]. Microscale factors may also influence physical activity [Brownson 2009, Boarnet 2011, Moudon 2003] but have not been studied as extensively as macro-level factors. Studying microscale factors allows for a more fine-grained examination of the environmental features that enable or inhibit physical activity and may be more cost effectively and easily modified than macro characteristics.

Microscale data are typically collected using in-person environmental audits.

2. Sources and tool

The Microscale Audit of Pedestrian Streetscapes tool was adapted from previous tools, primarily the Analytic Audit Tool [Brownson 2009], as modified by the Healthy Aging Network [Kealy 2005], and further modified by present investigators (see Appendix page 28 for item sources). Specific items thought to be relevant for seniors or youth were added to the instrument for all groups of participants (e.g., sidewalk cross-slope). A cul-de-sac section was added for the youth studies because of their potential use as play areas. The MAPS tool can be found online at <http://sallis.ucsd.edu/measures/maps> and at the end of this manual.

There are four sections of the tool: overall route, street segments (defined as the area between crossings), crossings, and cul-de-sacs, as described in Table 2. Route-level variables summarized characteristics for the whole route, for variables that were likely general throughout the route (e.g., speed limit, aesthetics) or infrequent (e.g., transit stops). Segment-level variables are collected on every segment on the route. Street crossing variables are measured at every intersection or crossing on the route. Cul-de-sac variables can be collected only when one or more cul-de-sacs were present within 400 feet of the participant’s home (as in our studies).

The route section included items related to land use and destinations, transit stops, street amenities, traffic calming, hardscape and softscape aesthetics, and the social environment. The segments section assessed sidewalks, street buffers, sidewalk slope, bicycle facilities, shortcuts, visibility from buildings (“eyes on the street”), building aesthetics, trees, setbacks, and building height. The crossings section assessed crosswalks, slopes, width of crossings, crossing signals, and pedestrian protection (e.g., curb extension, protected refuge islands). The cul-de-sacs section assessed the potential recreational environment within a cul-de-sac and included items about the size and condition of the surface area, slope, surveillance from surrounding homes, and amenities (e.g., basketball hoops).

3. Development of route-based data collection method

A major change from previous instruments was that observations were conducted on 1/4 mile routes starting at each participant's home address, and in some cases starting at the nearest commercial area. This was an efficient method of ensuring observations were relevant to each participant, but the approach may not be suitable for all study purposes.

In order to link MAPS scores to a person, routes should begin at the person's residence and should attempt to replicate a common walking path. Past studies have taken a 0.25 mile sample route, beginning at a study participant's home in the direction of the nearest "destination." Destinations may include commercial retail clusters, parks, schools or other destinations that make sense given the urban form and population of interest. Routes should be standardized for length to accurately capture differences in # destinations and other attributes among different types of neighborhoods.

The shortest route from a participant's home to the nearest eligible destination can be identified using Network Analyst (ArcGIS version 9.3, ESRI, Redlands, CA, 2009). The 1/4 mile endpoint can be determined using Google Maps (maps.google.com).

Here is an example protocol for destination selection from the TEAN study:

Participant routes: start at the participant's residence and go 0.25 miles in the direction of the nearest destination (cluster of retail, park OR school).

Destination definitions:

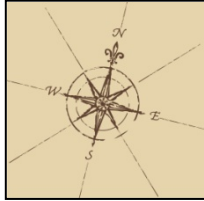
- **Clusters of retail include:** Convenience store, market, grocery, specialty, dollar, retail, warehouse, pharmacy, video stores, fast food, restaurant, coffee, bagel, buffet, fast casual restaurants FROM food enumeration databases AND civic, doctor-dentist, entertainment, large retail, museum, neighborhood retail, recreational, and super large retail FROM tax assessor parcel data. Auto parts stores and liquor stores were removed. Does not include parks or schools.
- **Parks** are eligible if they are: one acre or larger in size and its boundary intersects a participant's one kilometer road-network based buffer around their home.
- **School** types include: elementary, middle and high schools, college/university, parochial/religious FROM 3 sources (ESRI enumeration, our enumeration, participant reported).

The closest parcel represents the commercial cluster 'point' to measure distance to participant.

To investigate how the microscale environment of commercial centers affects physical activity and walking for transportation, past studies have also completed MAPS at a participant's nearest commercial center. These commercial centers can be identified using land use data available in GIS databases or using Google Maps or other directories. For commercial use, MAPS data can be collected on the main segment of stores or commercial outlets and one crossing on either side (2 total), creating a mini-route.

GIS parcel layers or other enumeration databases may be useful in identifying the closest destinations to each person's residence. Other options include using place listings on Google Maps or place layers on Google Earth.

B. Coordination and Management



1. Map Preparation

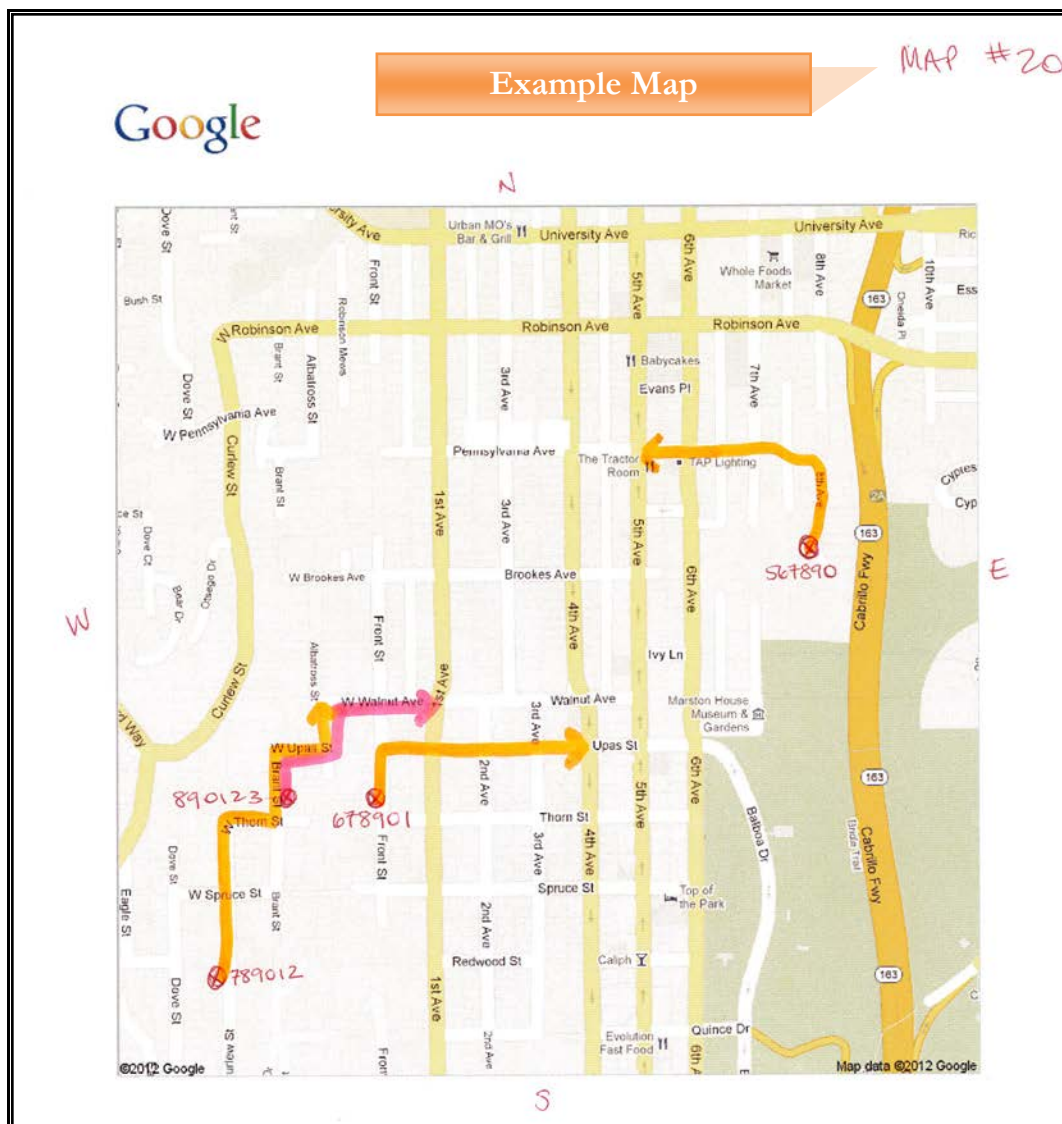
As mentioned above, MAPS data are collected as a whole route (as opposed to randomly selected segments and crossings) because it seeks to approximate a person's typical walking experience. The start point is the resident's home and the end point is approximately .25 mile toward the nearest destination. It is not necessary to extend MAPS routes to the end destination, as sometimes this can be a long distance from a person's residence depending on the type of neighborhood. Each route is drawn as an "out-and-back" journey, so choosing a .25 mile route requires up to .5 miles of walking both ways. Standardizing route length, like you would a buffer distance around participant residences, allows for comparison of the microscale environment on the same scale across a range of neighborhood types.

Once start- and end-points have been identified, maps should be created for each route to aid in data collection. Each route should be assigned a unique ID#. Using Google Earth, find the starting and ending addresses. Assuming the starting address is a person's residence and the ending address is a pre-determined destination, start at the participant's home and draw a route using the Ruler Path tool that heads in the direction of the destination, following a logical route (avoiding highways, alleys, and private property). Depending on study goals, this route may include informal pedestrian pathways or shortcuts. This route should measure at least .25 miles, but may extend further in order to avoid ending a route mid-segment. When the route reaches .25 miles, look for the next intersection as an ending point. If there is no intersection past .25 miles, but before .45 miles, find an ending address or landmark along the road as the ending point. If you reach the ending address before you have reached .25 miles, continue your route in the same direction. Once you have identified an end point, record this intersection or address and the exact distance in the management database (see below).

To create printed maps, find routes close to one another (using zip code or other identifying information) and print a Google map of the area. Multiple participant homes and routes can then be drawn on the map with ID#s.

With a colored highlighter, highlight the route to be rated and write in the participant ID# at the starting location of the route. Put an arrow (>) at the ending location. Label each map with N, S, E, and W (North, South, East, and West).

Give each map a number, starting with 1. Write it in the top right corner of the page. We recommend holding onto these maps as they will come in handy for inter-rater reliability field work.



Create a table for each map (see example “Table 20” table below) and fill in the route (ID) number, the starting (participant) address, and the ending intersection that is indicated on the map. **Copy this table onto the map page for the rater to reference. It can serve as their route assignment list for an area.**

Participants may have entire shared routes (e.g., two people living in the same apartment building), or partially shared routes (e.g., neighbors living a block apart). Enter N/A in “Shared” when you expect for this route to not contain any shared sections between routes, so that raters will know which blank cells will contain shared routes. Leave the rest of the columns blank for the rater to complete in the field and for the supervisor to review against incoming surveys.

Table 20

Route ID	Starting Address	Ending	Shared	Segments	Crossings	Culdesacs
567890	3701 8 th Ave	Pennsylvania Ave & 5 th Ave	N/A			
678901	3452 Front St #8	Upas St & 4 th Ave	N/A			
789012	3224 Curlew St	Albatross St & W Walnut Ave				
890123	3453 Brant St	W Walnut Ave & 1 st Ave				

2. Management Database

We track and manage our MAPS data and field work assignments with Microsoft Access databases. We highly recommend taking the time for good record keeping when collecting data. We are willing to share our databases or you can create your own using Access, Excel, or another program of your choice. The following variables are useful to include:

- Route ID#
- Map #
- Starting street address
- Starting city
- Starting zip code
- Starting block group or smaller measurement unit, if possible
- Ending address or intersection (include park or school name if applicable)
- Assigned? [yes/no]
- Rater # assigned to
- Rated? [yes/no]
- Date rated
- Complete? [yes/no]
- Number of segments rated
- Number of crossings rated
- Number of cul-de-sacs rated
- Inter-rater reliability assignments fields (e.g., rater, assigned, completed, etc.)
- Comments

This management database can be used to manage the mapping process as well as the data collection process. A screenshot from our database is below.

Once a Route has been assigned to a rater,

- Fill in a “1” under Assigned, the date to be rated, the rater number who will be collecting the data, and a “0” in Complete to indicate an outstanding assignment.

After the Route has been rated,

- Look up each Route ID# and enter the date that the route was completed (to replace the date expected to be rated) and change the “0” in Complete to a “1”.

- Fill in the number of segments, crossings, and cul-de-sacs from the table on the map and note if any were shared in the comments field
- Write in the ID# fields for segment, crossing, and cul-de-sac IDs that were given to each Route (see #6, Assigning IDs below).

Management Database Form created in MS Access

MAPS	
Assignments	
Map	187
ID	440323252041
Address	9950 181st Ave NE
City	Redmond
Zip	98052
BlockGroup	530330323252
Ending	NE 104th St & 177th Ave NE
Length	0.35
Comments	
mapped	1
Assigned	
Date Scheduled	
Rater	
Date Rated	
Complete	
xings	
segments	
cul-de-sac	
IDs_assigned	
any_shared	☐
Reliability	
Rel_assigned	
Rel_datescheduled	
Rel_rater	
Rel_daterated	
Rel_complete	
CertificationTool	

3. Quality Control Procedures

Once a route has been completed, raters are asked to group the survey pages that make up the route together in a folder and label with the Route ID# on the Route portion of the survey tool.

- Surveys should be ordered starting with the route section of the tool, then the cul-de-sac (if applicable), then the first segment which starts at the participant's house, the first crossing, second segment, second crossing, etc. for as many as are present in the route, ending with the last segment at the ending address. A commercial package will be ordered by Route, First Crossing, Segment, Last Crossing. This order will help the rater and supervisor check that a route was followed and completed in a logical fashion.

- If a cul-de-sac, segment, or crossing is shared the rater will circle “Y” at the top of the page and write in the Route ID# (participant or commercial) that the survey piece is shared with. They will complete the heading information and then may leave the rest of the page blank (as opposed to duplicating the survey responses). These blank ‘shared’ pages will serve as place-holders in the package to make it easier for the supervisor to verify a complete route.

Data Checking to be Done Immediately

For each route assignment, a supervisor will sit down with the rater and check:

General:

- that the Route ID# and the participant address completed by the rater on the first segment surveys match the assignment from the table on the map.
- that the ending segment cross-streets completed by the rater match the assignment.
- that the route the rater took from their starting address to their ending location flows in a logical sequence (i.e., has the correct number of crossings relative to the number of segments, has a logical flow to the street names, takes place on the correct side of the road, etc.). In the course of data collection, raters can sometimes swap pieces between routes, so this location-specific checking can be helpful in making sure each piece is matched with the correct route.
- carefully make sure every question has an answer including the “N/A” or “No sidewalk” options. Any issues or missed questions need to be looked at by the rater immediately in hopes that the answer can be easily resolved without returning to the field.
- that the headings on each page are filled in completely, accurately, and are legible. These include date, rater ID, Start time, End time, Type (residential or commercial), all street names, and directions (N, S, E, W).
- that all comments and questions marked by the rater have been addressed.
- that questions with directions specifying “Check one” only have 1 answer checked.

Data Checking to be Done Within a Week

At a later time, but within a week, the supervisor will do a second, more thorough check to make sure:

Route	
SS1	The number of bus stops in SS1a must match up with the number of bus stops in SS2
A6	If anything in A6 is marked besides signage, A7 cannot be “None.” If there are only neighborhood watch signs or signage for commercial destinations or parks, A7 can be marked as “None”.
Segment	
S1	If S1 is no sidewalk, “No sidewalk” should be checked for S2, S4-9, S3a = No, and S3b = N/A.
S1	If S1 (presence of sidewalk) is “Yes”, S12 and S13 will always be N/A. If S1 is “No”, S12 must be either “Unpaved pathway”, “Street shoulder”, “Buffer”, or “No”.
S6b	If S6b is “Little”, S6c must be answered. If S6b is “Some” or “Most or All”, S6c must N/A.
S12	If S12 is either “Unpaved pathway”, “Street shoulder”, or “Buffer”, S13 must be either “<4 ft.” or “≥4 ft.”. If S12 is “No”, then S13 must be “None”. If S12 is “N/A

	sidewalk present”, then S13 must be “N/A”.
S12	If buffer is marked for S12, it should <u>not</u> also be marked for S3. Therefore, S3a would “No” and S3b would be N/A.
S18a	If there is a cul-de-sac, S18a must be “Yes” and S18b must be either “Yes” or “No”. N/A can only be marked for S18b if S18a is “No”.
S20-22	S20-22 can only be “N/A” when there are no buildings on the segment.
S23-25	If there is no sidewalk, buffer, walkway, or safe place to walk, S23-25 must be N/A.
S23-24	If there are 0-1 trees on a segment, S24 must be N/A. If there are 2 or more trees on a segment, either evenly or irregularly should be marked.
S25	If there are no trees on the segment, S25 must be N/A.
S26-27	If there is a smallest setback S26, there cannot be “No building” checked for largest setback S27.
Crossing	
C1	If C1e is checked, C12e must also be checked with a reason filled in.
C2	N/A can only be used for an unanticipated mid-segment crossing (indicated by C1e)
C4, C8	If C8a is checked, C4 cannot be -777 (no crosswalk).
Cul-De-Sac	
D12a	If D12a is “No”, D12b-c must be “N/A”.

Anything caught in this screening will be brought to the rater for clarification at the weekly meeting or at their next shift, whichever comes first.

4. Assigning ID#s to Segments, Crossings and Cul-de-Sacs

Each section of a route (segments, crossings and cul-de-sacs) should be assigned a unique ID# which is different from the Route ID#. This will allow different routes to share segments, etc. without being tied to a participant-specific ID#.

- Take extra care with shared sections of different routes to verify they have the same ID#s. Also do this when you have reliability routes (*see Reliability section*).
- Start assigning (writing on the tool) ID#s for each segment, crossing, and cul-de-sac in numerical order, never giving out the same ID# more than once.
- Keep track of which numbers have been assigned so they aren’t repeated. Put these numbers on the manila folder next to the Route ID# and file them in order by assigned ID#s. This will help you keep track of where you left off.
- Any shared cul-de-sacs, segments, and crossings with the complete data will need to be photocopied and inserted into the routes that they are shared with so that each participant route ends up with complete data when it goes to the data entry stage.

C. Training and Certification

1. Training Schedule



MAPS training should be conducted over a three-day period.

Day 1: The first day will include a 4-hour in-office training that reviews each item along with photo examples (contact us for more information). Raters will also be given an item-by-item protocol binder that they can carry in the field and will be asked to measure their stride length so they will have a way to accurately measure distances in the field. Raters should be given a review on map reading and direction finding (example: how to find North on a map) and general study protocol. They can then complete a quiz (see #3 below), and the remainder of the first day (approximately 3 hours) can be spent in the field. Training routes should be selected to include most elements on the MAPS tool (e.g., cul-de-sacs, commercial destinations, variability in quality ratings). On the first day, the trainer and raters should walk through a route together, discussing their ratings as they go.

Day 2: The second day of training will consist of mostly in-field training for 6-8 hours. Raters will travel to the second training route, and will rate each section of the tool on their own before reviewing as a group. For example, all raters will complete the first segment, then pause and review the ratings as a group. If time permits, one or two more training routes can be completed independently, and then turned in to the trainer. These independent ratings (training reliabilities) should be reviewed before the third day of training, with the trainer providing a “gold standard” rating. Raters can then be given immediate feedback on the third day before completing certification tools (see below).

Day 3: Certification (see below)

2. Quizzes

Raters will complete a quiz in the office on the first day of training to determine field readiness.

MAPS Quiz

Name: _____

1. Where do you begin a microscale route?
At a participant's house
- 2a. What survey are you using first? **Segment**
2. Where do you begin a microscale route if a participant lives in an apartment complex?
At the entrance to the complex on the sidewalk
3. How many of your steps equal 10 feet?
Depends
4. When do you complete a crossing survey? **Circle all that apply.**
 - a. When you cross an alley or large driveway
 - b. At the starting point of each route
 - c. **When you encounter a crossing on your walking route (same side of street)**
 - d. **When you need to make an unanticipated mid-segment crossing**
 - e. When there is a crossing on the other side of the street
 - f. When you turn a 90° corner on the same street
5. When do you start a new segment survey? **Circle one answer.**
 - a. After you complete a crossing
 - b. When you have an unanticipated mid-segment crossing
 - c. When you turn a corner and the street name changes
 - d. **All of the above**
6. On the segments survey, which items are counted on both sides of the street? **Circle all that apply.**
 - a. **Building colors**
 - b. **Bike lanes**
 - c. **Building material**
 - d. Sidewalk width
 - e. Percentage of windows at street level
 - f. **Building height**
7. What do you do when you encounter a construction site that impedes your walkway?
Circle one.
 - a. Walk around it by going into the street and continuing with the segment survey
 - b. Cross the street and continue with the same segment survey
 - c. **Cross the street, complete a crossing survey and start a new segment survey**
 - d. go through it anyway

3. Rater Certification

A rater must be certified to be able to do MAPS ratings on their own. After training, the rater will complete 5 MAPS routes independently. If commercial centers will be rated, include 3 in certification. These routes will have already been rated by a 'gold standard' trainer. The rater will bring back their data and the supervisor will compare survey responses after they are entered into a database.

After both certification surveys have been entered (the gold standard survey can be entered ahead of time), they should be screened for discrepancies, either by using syntax or screening by hand. It can be helpful to screen certification tools in Excel so that progress can be tracked over time – see the below image for an example. Go through each pairing carefully and highlight any discrepancies – less serious discrepancies in light yellow and more serious discrepancies in a bolder color. Less-serious discrepancies will include small differences in items that estimate percentages, slope or number of trees. For example, a rater may answer '6-10 trees' on a segment where the gold-standard rater has answered '11-20 trees'. More serious discrepancies will include presence ratings, or large differences in other items. For example, a rater may miscount the number of traffic lanes in a segment, or neglect to count establishments in the land use/destinations section of the route tool. Make note of any serious errors or incorrect patterns at the top of the spreadsheet so that you can start to track progress over time (see example below). **Make sure to spend time with each rater going through the certification tool discrepancies and giving feedback.** In the certification process *only*, it is ok to edit the data to get the cleanest tool possible since these data aren't typically used in inter-rater reliability analyses.

Home														Insert				Page Layout				Formulas				Data				Review				View				Print2PDF							
Clipboard		Cut		Copy		Format Painter		Font		Paragraph		Alignment		Merge & Center		General		Number		Conditional Formatting		Format as Table		Cell Styles		Insert		Delete		Format		Cells		AutoSum		Fill		Sort & Find		Filter & Select		Clear		Editing	
AA1														f1																															
A		B		AA		AB		AC		AD		AE		AF		AG		AH		AI		AJ		AK		AL		AM		AN		AO		AP											
NOTES: May be overcounting minor trip hazards and building accent colors																																													
1	ROUTE	Minutes	34	30		25	25		28	72		25	30		40	57		6																											
2	Route ID		1039023001.1	1039023001.0		1132043001.1	1132043001.0		1132044001.1	1132044001.0		1132044002.1	1132044002.0		1135052003.0	1135052003.1		1166141009.0																											
3	Start_time		10:00 AM	9:30 AM		12:35 PM	10:16 AM		1:06 PM	11:18 AM		1:55 PM	10:44 AM		11:10 AM	3:10 PM		9:40 AM																											
4	End_time		10:34 AM	10:30 AM		1:00 PM	10:41 AM		1:34 PM	12:30 PM		2:20 PM	11:14 AM		11:50 AM	4:07 PM		10:40 AM																											
5	Date		7/27/2009	7/1/2009		8/7/2009	8/7/2009		8/7/2009	8/7/2009		8/7/2009	8/7/2009		7/17/2009	7/25/2009		7/14/2009																											
6	Auditor		86	88		86	80		86	80		86	80		86	81		80																											
7	LU1		1	1		1	1		1	1		1	1		1	1		1																											
8	LU2a	no parking	0	0		0	0		0	0		0	0		0	0		0																											
9	LU2b	on-street parallel	1	0		1	1		1	1		1	1		1	0		1																											
10	LU2c	small lot	0	1		0	0		0	0		1	0		1	1		1																											
11	LU2d	medium lot	1	0		1	0		0	0		0	0		0	0		1																											
12	LU3a		0	1		1	1		1	1		1	1		1	0		0																											
13	LU3b	multi-unit homes	1	0		1	0		1	0		1	1		1	0		1																											
14	LU3c	apartments	0	1		0	1		0	0		0	1		1	1		1																											
15	LU3d		0	0		0	0		0	0		0	0		0	0		0																											
16	LU3e		0	0		0	0		0	0		0	0		0	0		0																											
17	LU3f		0	0		0	0		0	0		0	0		0	0		0																											
18	LU4	non-residential adjacent	4	4		1	2		3	5		6	5		6	6		6																											
19	LU5	non-residential parking	2	2		5	5		2	1		6	3		6	6		6																											
20	LU6a	fast food	1	1		1	1		0	0		0	0		0	0		0																											
21	LU6b	sit-down	0	0		0	0		0	0		0	0		0	0		0																											
22	LU6c	grocery	0	0		0	0		0	0		0	0		0	0		0																											
23	LU6d	convenience store	0	0		0	0		0	0		0	0		0	0		0																											
24	LU6e	café	0	0		0	0		0	0		0	0		0	0		0																											
25	LU6f	liquor store	0	0		0	0		0	0		0	0		0	0		0																											
26	LU6g	big box store	0	0		0	0		0	0		0	0		0	0		0																											
27	LU6h	specialty food store	0	0		0	0		0	0		0	0		0	0		0																											
28	LU6i	pharmacy	0	0		0	0		0	0		0	0		0	0		0																											
29	LU6j	bank	0	0		0	0		0	0		0	0		0	0		0																											
30	LU6k	health	0	0		0	0		0	0		0	0		0	0		0																											
31	LU6l	professional	0	0		0	0		0	0		0	0		0	0		0																											
32	LU6m	entertainment	0	0		0	0		0	0		0	0		0	0		0																											
33	LU6n	other service	1	2		0	0		2	2		1	0		0	0		0																											
34	LU6n	other retail	2	2		0	0		2	0		0	0		0	0		0																											

It's uncommon for any rater to be certified after this first round of tools. If necessary, the rater should be assigned 5 more MAPS routes. Again, the data should be compared in the rater's spreadsheet and feedback provided. If at this point the supervisor decides a rater can be certified, then they will be able to do independent ratings. If the rater cannot be certified at this point, they will continue the training and certification. It is unlikely but possible that a rater cannot be certified after many rounds of data comparison and feedback. After the certification process is complete, inter-rater reliability calculations can begin.

Considerations for Certification:

- Raters with consistent major errors after feedback should likely not be certified (for example, a rater who continues to confuse the distinction between a marked crosswalk and a raised crosswalk or who consistently miscounts land use destinations).
- Raters who consistently misjudge more minor issues such as distance measurements should likely not be certified until they are better able to accurately measure in the field. For example, they might be asked to re-measure stride length and both estimate and walk a few lengths as practice before returning to the field.
- The decision to certify a rater can partially be a judgment call. As supervisors provide feedback to the rater after each certification round, they will get a sense of whether the rater understands both their errors and how to correct them.

4. Inter-rater reliability management

More detail will be discussed below (Section E., Inter-Rater Reliability). Throughout the data-collection process, the same route will be completed by each rater pair to assess inter-rater reliability. These reliability tools should be used as an opportunity for quality control and ongoing rater training. Using the same techniques as for certification, these tools should be scanned for major and minor inconsistencies and reviewed with each rater.

5. Expectations

- It is expected that each route will take approximately 30 minutes to complete. Commercial clusters should take approximately 10-15 minutes.
- Raters should complete every route that they start, so they should pay attention to how much time is left before the end of their shift. If there isn't enough time to complete a participant route, they should not start it.
- After completing but before leaving a route, the rater should review the tool and be sure to fill in any blank fields before leaving the location.
- Rater should complete tools in pen and make sure to write legibly.
- If a rater cannot find a place, gets lost, has questions on the end-point etc., they should call the office.
- Raters should meet with a supervisor at the end of each shift to check in about the tools last completed. They should count on spending about 30 minutes debriefing (based on a full 4-hour data collection shift). The supervisor will keep a running list of issues to discuss with the group.
- A weekly meeting is mandatory to discuss as a group the week's issues and questions that have come up. The minutes from the previous week will be read and discussed and then each

agenda item will be discussed. Post-meeting, the protocol will be updated as necessary, and any decisions will be added to a comprehensive document that can be distributed to raters to keep in their binders to remind them of decisions made.

D. Rater Procedures

Recommendation for inclinometer:
M-D Building Products SmartTool 24
inch digital level and inclinometer (M-D
part number 92288)

Daily Procedures

Raters should arrive in the office with their training binder (containing the protocol and picture guide) before data collection to gather materials. Raters will be given directions to each destination, map(s) of assigned ratings with all locations marked, extra copies of the surveys, an inclinometer for measuring sidewalk slope, a stopwatch for measuring crosswalk timing, and an area map. They should have their supervisor's phone number with instructions to call about any questions in the field.

Upon arriving in the office, raters will organize their tools into manila folders, one per route, labeled with the Route ID. They will then debrief with a supervisor (process outlined in Quality Control procedures above) for 30 minutes before their shift is complete.

Raters will also be asked to attend a weekly meeting where they will receive protocol updates or clarifications. If they have taken any pictures while in the field that may be of use to the team, they should bring them to the meeting.

E. Data Entry

Once the data have gone through all of the quality control checks necessary it is time to enter the data. See the Data Entry Dictionary on page 36 for detailed item entry coding. Data entry staff/students are trained on the logic checking (pages 11-12) to ensure data are as clean as possible going into the database. We created an Access database for data entry – see sample screenshot below. In Access, multiple tables (i.e., route, segment, crossing, culdesac) can be combined so that all data can be entered on one form. This can be an easier format for entry than using a datasheet. Other advantages include the ability to specify allowable values for each variable and to program status bar text that will provide a reminder of item coding for each item. We can share this database if requested.

Data Entry Form created in MS Access

MAPS - Route										Cul-De-Sac									
Date: 7/22/2009 Auditor: 1 Enterer#: 10					Route ID: 347013103008.0 EntryDate: 12/11/2009					CdS ID#: 13100					Auditor: 1				
Start: 1:42 PM FollowUp: #Nar					End: 2:00 PM					Street: Peebles Ct									
Land Use		6j 0		Streetscape		3a 0		Aesthetics		D1 1		D10 1		D2 2		D11 1			
1 1		6k 0		1a 0		3b 0		A1 0		D3a 1.4		D12a 0		D3b 1.6		D12b -777			
2a 0		6l 0		1b 0		4a 0		A2 0		D4 4		D12c1 -777		D5 1		D12c2 -777			
2b -1		6m 0		2_1a -777		4b 0		A3 0		D6a 0		D12c3 -777		D6b 0		D12c4 -777			
2c 0		6n 0		2_1b -777		4c 5		A4 2		D6c 1		D12c5a -777		D6d 0		D12c5b -777			
2d 0		6o 0		2_1c -777		4d 2		A5 2		D6e1 0				D7 1					
3a -1		6p 0		2_2a -777		4e 0		A6a 0		D8 1				D9 6					
3b 0		6q 0		2_2b -777		5 1		A6b 0											
3c 0		6r 0		2_2c -777		6 3		A6c 0											
3d 0		6s 0		2_2d -777		7a 0		A6d 0											
3e 0		6t 0		2_3a -777		7b 0		A6e 0											
3f 0		6u 0		2_3b -777		7c 0		A6f 0											
4 777		6v 0		2_3c -777		7d 0		A6g 0											
5 777		6w 0		2_4a -777		7e 0		A6h 0											
6a 0		6x 0		2_4b -777		7f 0		A6i 0											
6b 0		6y 0		2_4c -777		7g 0		A6j 0											
6c 0		6z 0		2_4d -777		8 0		A7 0											
6d 0		6aa 0						A8 0											
6e 0		6ab 0						A9a 0											
6f 0		6ac 0						A9b 0											
6g 0		6ad 1						A9c 0											
6h 0		7a 0						A9c1 -777											
6i 0		7b 0						A10 1											
7c 0																			
Segments																			
Segment 1					Segment 2					Segment 3									
S1_ID 11116.0					S2_ID 11117.0					S3_ID 11118.0									
Type 1					Type 1					Type 1									
Street Peebles Ct Side 1					Street Shamrock Dr Side 4					Street Shamrock Dr Side 4									
Xst 1 3016 PEEBLES CT					Xst 1 Peebles Ct					Xst 1 Shamrock Terrace									
Xst 2 Shamrock Dr					Xst 2 Shamrock Terrace					Xst 2 Buehler Rd									
S1_1 1 S1_13 777					S2_1 1 S2_13 777					S3_1 1 S3_13 777									

If a new data entry file is created by the research team, it is critical that the variables are named and data are coded according to the **Data Entry Dictionary** (see page 36). **Otherwise, the scoring syntax will not work!**

We double-enter our MAPS data to ensure accuracy. A duplicate data entry database can be created while adding an identifier to each variable name (e.g., “2_”) to indicate 2nd entry. SPSS can then be used to find any discrepancies in number fields by subtracting the value for one entry from the value in the other entry (e.g., syntax computation). Any values >0 indicate a discrepancy that needs to be investigated. Syntax available upon request.

The following fields will need to be screened by hand for discrepancies because they are string variables:

Route Items - SS2_1a, SS2_2a, SS2_3a, SS2_4a, SS3a, SS3b, SS4a-e, A9c1

Segment Items – Segment, Xstreet1, Xstreet2

Crossing Items - Xstreet1, Xstreet2, 12e1, 12f1

Cul-de-Sac Items - D6e2, D12c5b

Once discrepancies have been found, go back to the original paper survey to find the correct answers. Keep record of which enterer is making the errors so feedback can be provided. Make

sure the correct answer is entered in the first entry and run the SPSS discrepancy syntax again to verify identical values.

Lastly, check that the Route ID#s and the 1st segment's starting address match with the management database. The IDs should correspond to participant ID#s, and the segment starting address will almost always be the participant's home address or the address of the commercial center.

F. Inter-rater Reliability

1. Procedures

Reliability data should be completed periodically throughout the data collection period after raters have become certified to rate independently. After certification, we typically complete inter-rater reliability ratings on 10% of the entire sample. Each rater should complete a similar percentage of reliability routes, and all raters should be compared against each other an equal number of times. Inter-rater reliability audits should be completed within 1 week of each other. The second rater should be given a tool with the location information completed (including ID#s with a .1 at the end to indicate that it is part of the reliability sample. They should also be given the same map that the first rater was given. Before the rater goes out into the field, they should know exactly which segments and crossings they should rate and on which sides of the streets, but this will also be verified when they return.

Raters will then meet with a supervisor at the end of each day to review the maps and surveys to assure that ratings were done on exactly the same route (same side of the street), that crossings were completed in the same direction, and ending at the same point. If it is determined that there was a deviation from the original intended route, the reliability rating will need to be completed again. Raters can then be given feedback from a supervisor (using the same procedures outlined in the Certification section above).

Raters need to be given feedback on their inter-reliability tools as quickly as possible to avoid developing chronic mistakes. After both reliability tools have been entered, export the entry tables (route, cul-de-sac, segment, and crossings separately) into each rater's Excel spreadsheets started during the certification process. Go through each pairing carefully and highlight any discrepancies – less serious discrepancies in light yellow and more serious discrepancies in a bolder color. Make note of any serious errors or incorrect patterns at the top of the spreadsheet so that you can start to track progress over time.

Meet with each rater individually and go through their reliability spreadsheet. Pull up Google Maps street view for a visual description and to jog the rater's memory. In some cases, Google street view can allow you to determine which rater made the correct decision. Discuss each discrepancy with each rater and make sure that they understand the issues that come up. If it is determined upon review that one tool was largely more accurate than the other, this tool can be ID'd as the '.0' tool, to be used in study analysis, and the other, less accurate tool can be ID'd as the '.1' tool to be reviewed in reliability analysis only.

2. Item psychometrics



Item-level psychometrics can be found here: <http://sallis.ucsd.edu/measures/maps>

3. Subscale psychometrics

Part 1: Route subscale characteristics: n= 290 route reliability pairs

Subscale	# items (range of scores)	Sample items* and overall subscale description	Mean (SD)	ICC, % agreement	Range of item ICCs or Kappas
Land Use and Destinations Subscales					
Positive Subscales					
Residential Mix (weighted residential density)	4 (0-3)	Single family homes, apartments/condominiums, apartments above street retail	1.34 (.64)	.577, 80.0%	.292 (retirement/seni or living facilities) - .776
Commercial-Shops	10 (0-11)	Food-related land uses, retail and service- oriented land uses and shopping centers	1.37 (2.25)	.873, 74.2%	.407 -.842
Commercial- Restaurants/Entertainment	4 (0-6)	Food-related uses (fast food, sit-down, café), entertainment	.799 (1.31)	.842, 81.3%	.765-.796
Institutional/Services- Professional Services	3 (0-6)	Bank/credit union, health-related professional, other services	1.26 (1.54)	.849, 75.3%	.743-.808
Institutional/Services- Religious, Schools (each a single item)	1 each (0-2 each)	Government or community land use: Place of worship; school	N/A	Religious : .712 Schools: .722	Same as subscales
Government Services	4 (0-4)	Health or social services, library/museums, post office, senior center	.135 (.436)	.652, 91.4%	.279 (senior center) -.798
Parking Structures (positive influence on PA)	2 (0-2)	No parking facilities present, -parallel/angled on-street parking	1.61 (.79)	.736, 80.0%	-.011 (no parking) -.689
Recreational Land Use- Public Recreation Facilities	4(0-3)	Community garden, public indoor, public outdoor pay, public park	.179 (.466)	.717, 91.6%	.497-.679
Recreational Land Use- Private Recreation Facilities	2 (0-2)	Private indoor, private outdoor	.097 (.34)	.696, 95.5%	.659-.704
DLU Commercial (an interim subscale, may be used independently, but not included in overall scores)	3 subscales (0-21)	Sum of shops, restaurant/entertainment, and services subscales. Subscale created to reflect most common pedestrian destinations. Not included in overall positive subscale.	3.39 (4.40)	.889, 50.3%	See above
DLU Overall Positive Subscale	10 subscales	Sum of subscales: residential mix, shops, restaurants/entertainment, services,	7.08 (4.51)	.855, 43.8%	See above

	(2-24)	government services, religious, schools, positive parking, public recreation, and private recreation.			
Negative Subscale					
Adverse Land Uses: Industrial, Abandoned Lot/Building, Surface Parking Lot or Garage **ALSO IS DLU Overall Negative	6 (0-7)	Warehouse/factory/industrial, abandoned building, large parking facilities	1.17 (1.24)	.610, 96.3%	-.029 (abandoned building)-.659
Overall Subscale					
DLU Overall Subscale Score	2 subscales (0-21))	DLU Overall Positive subscale – Adverse Land Uses subscale	5.91 (4.71)	.801, 37.7%	See above
Streetscape Subscales					
Positive Elements Subscale	18 (0-10)	Transit stops, posted speed limit, pedestrian signage, street amenities (e.g., working telephone, trash bins)	3.70 (2.16)	.741, 49.8%	.395 (presence of kiosks or info booths) - .838
Negative Elements Subscale	5 (0-4)	High speed limits, roll-over curbs, driveways	1.69 (.876)	.742, 70.1%	.433-.814
Overall Streetscape Score	2 subscales (-3 – 10)	Positive Streetscape Elements subscale– Negative Streetscape Elements subscale	2.01 (2.66)	.762, 45.7%	See above
Aesthetics and Social Subscales					
Positive Aesthetics and Social Subscale	5 (0-5)	Public art, landscaping maintenance	2.08 (1.09)	.632, 48.7%	.391 (Signage for commercial destinations or parks) -.689
Negative Aesthetics and Social Subscale	14 (0-8)	Graffiti, physical disorder, broken windows	1.91 (1.81)	.514, 36.6%	.088 (social disorder (dichot: none vs. any) -.665
Overall Aesthetics and Social Score	2 subscales (-8 – 5)	Positive Aesthetics and Social -Negative Aesthetics and Social Subscales	0.18 (2.52)	.580, 29.5%	See above
Total Route Score	3 overall subscales (-2 – 33)	Sum of 3 overall scores	7.94 (8.18)	.816, 17.4%	See above

Part 2: Segment subscale characteristics: all studies combined (n= 516 segment reliability pairs with complete sidewalk data).

Subscale	# items (range)	Sample items* and overall subscale descriptions	Mean (SD)	ICC, % agreement	Range of item ICC or Kappa
Positive Subscales					
Building Height and Setbacks	3 (0-4)	Smallest and largest setbacks and building height	1.31 (.644)	.370, 69.0%	.522-.764
Sidewalk Positive Qualities	3 (2-3)	Sidewalk presence and widths	2.23 (.419)	.555, 84.6%	.489-1.00
Buffers	2 (0-2)	Buffer presence and width	.826	.912, 93.0%	.882-.919

Bicycle Infrastructure	2 (0-3)	Marked bicycle lane, signage	(.941) .200 (.706)	.855, 95.4%	.676-.791
Building Aesthetics and Design	4 (0-7)	Street-level windows, building colors and materials	3.85 (1.81)	.705, 38.0%	.549 - .629
Trees	3 (0-5)	Number and spacing of trees, percent of sidewalk shaded	2.15 (2.08)	.744, 51.2%	.540-.737
Building Height: Road Width and Setback Ratio	3 (0-3)	Smallest and largest setbacks, building height, and road width	.103 (.457)	.614, 97.1%	n/a
Informal Path (single item)	1 (0-1)	Is there an informal path (shortcut) which connects to something else?	n/a	.554 (K), 91.1%	n/a
Overall Positive	7 subscales plus 1 item (3-20)	Sum of subscales: building height and setbacks, sidewalk positive qualities, buffers, bike infrastructure, building aesthetics and design, trees, Building Height: Road Width and Setback Ratio, plus item: cul-de-sac connectivity	10.68 (3.22)	.750, 25.8%	See above
Negative Subscales					
Sidewalk Negative Qualities	5 (0-4)	Trip hazards, obstructions in the sidewalk	1.09 (1.02)	.675, 55.5%	.503-.796
Sidewalk Steepness (children/teens)	3 (0-5)	Slope, cross-slope (steeper slope acceptable for children)	1.09 (1.01)	.596, 60.1%	.503- .775
Sidewalk Steepness (seniors)	3 (0-7)	Slope, cross-slope (less steep slope acceptable for seniors)	2.18 (1.64)	.633, 42.4%	.502- .746
Overall Negative Subscale (Child/Teen)	2 subscales (0-10)	Sum of subscales: Sidewalk negative qualities, sidewalk steepness (children/teens), negative street design/width	2.28 (1.68)	.681, 42.0%	See above
Overall Negative Subscale (Senior)	2 subscales (0-12)	Sum of subscales: Sidewalk negative qualities, sidewalk steepness (seniors), negative street design/width	3.37 (2.05)	.683, 32.7%	See above
Overall Subscales					
Overall Segments Score (Child/Teen)	2 (-1 -17)	Overall Positive – Overall Negative subscales (child/teen)	8.38 (3.34)	.742, 25.0%	See above
Overall Segments Score (Senior)	2 (-2 -16)	Overall Positive – Overall Negative subscales (senior)	7.29 (3.57)	.749, 23.0%	See above

Part 3. Subscale characteristics: all studies combined (n= 319 crossing reliability pairs)

Subscale	# items (range)	Sample items* and overall subscale description	Mean (SD)	ICC, % Agreement	Range of item ICC or Kappa
Positive Subscales					
Crosswalk Amenities/Qualities	9 (0-4)	Crosswalk characteristics (e.g., marked crosswalk, high visibility markings)	.987 (1.08)	.807, 70.2%	-.012 (curb extensions) - .816
Curb Quality/Presence	2 (0-2)	Pre- and post-crossing curb lining up with crossing	1.33 (.91)	.684, 82.4%	.648-.651
Intersection Control and Signage	10 (0-7)	Stop signs, pedestrian walk signals	1.28 (1.31)	.753, 81.2%	.327 (traffic circle) - .811
Overall Positive Crossing Characteristics Subscale	3 subscales (0-12)	Sum of subscales: crosswalk amenities/qualities, curb	3.61 (2.53)	.828, 57.6%	See above

		quality/presence, intersection control and signage			
Negative Subscales					
Lanes/Road Width of Crossing	1 (0-2)	Distance of crossing leg (# lanes wide, trichotomized)	.764 (.581)	.525, 72.9%	n/a
Crossing Impediments	7 (0-4)	No curb ramp, gutters in crossing, faded/worn crosswalk markings	1.14 (1.17)	.728, 72.9%	.188 (poor visibility at corners) - .893
Overall Negative Crossing Characteristics Subscale	2 subscales (0-5)	Sum of subscales: Lanes/Road Width of Crossing, Crossing Impediments	1.53 (1.48)	.587, 61.2%	See above
Overall Subscale					
Overall Crossings Score	2 subscales (-4-8)	Sum of subscales: Overall Positive Crossing Characteristics-Overall Negative Crossing Characteristics	2.05 (2.27)	.860, 42.4%	See above

Source: Millstein RA, Cain KL, Sallis JF, Conway TL, Geremia CM, Frank LD, Chapman J, Van Dyck D, Amberg L, Kerr J, Glanz K, Saelens BE. Development, Scoring, and Reliability of the Microscale Audit of Pedestrian Streetscapes (MAPS). Manuscript under review.

G. Scoring Development

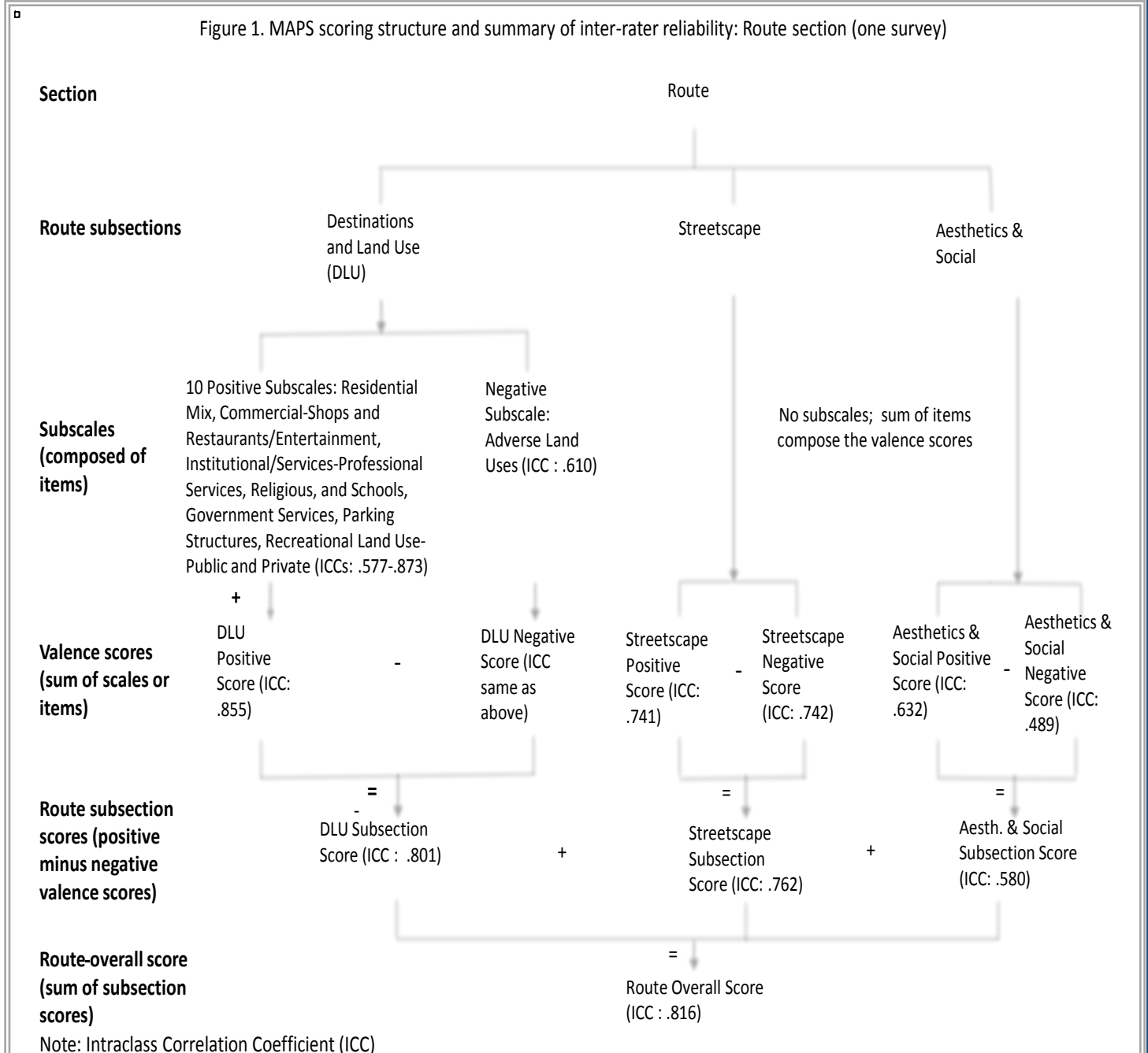
1. Survey-based scoring system development

Theoretical elements were combined within the framework of the MAPS tool's sections (route, crossings, segments, cul-de-sacs) which resulted in a tiered classification system of items into subscales at multiple levels of aggregation. Decisions about creation of scores and scales were made based on expert consensus (members of the study team), theoretical determinations, and to create maximally policy relevant subscales

There are 3 main sections of the tool --- Route, Segments, and Crossings along with Cul-de-Sac items to be used when applicable. The route section had three subsections (destinations and land use, streetscape, and aesthetics and social), and subscales were computed as a precursor of higher levels of scale aggregation. Items from each of the three main MAPS sections were sorted a priori into subscales based on by group consensus. All sections and subsections had positive and negative valence scores, based on expected effect on physical activity, except cul-de-sacs, which only had a single (positive) score. Negative valence scores were subtracted from positives to create subsection scores for routes. Finally, omnibus scores were created for each of the three main sections (route, crossings, segments). See Flowcharts below.

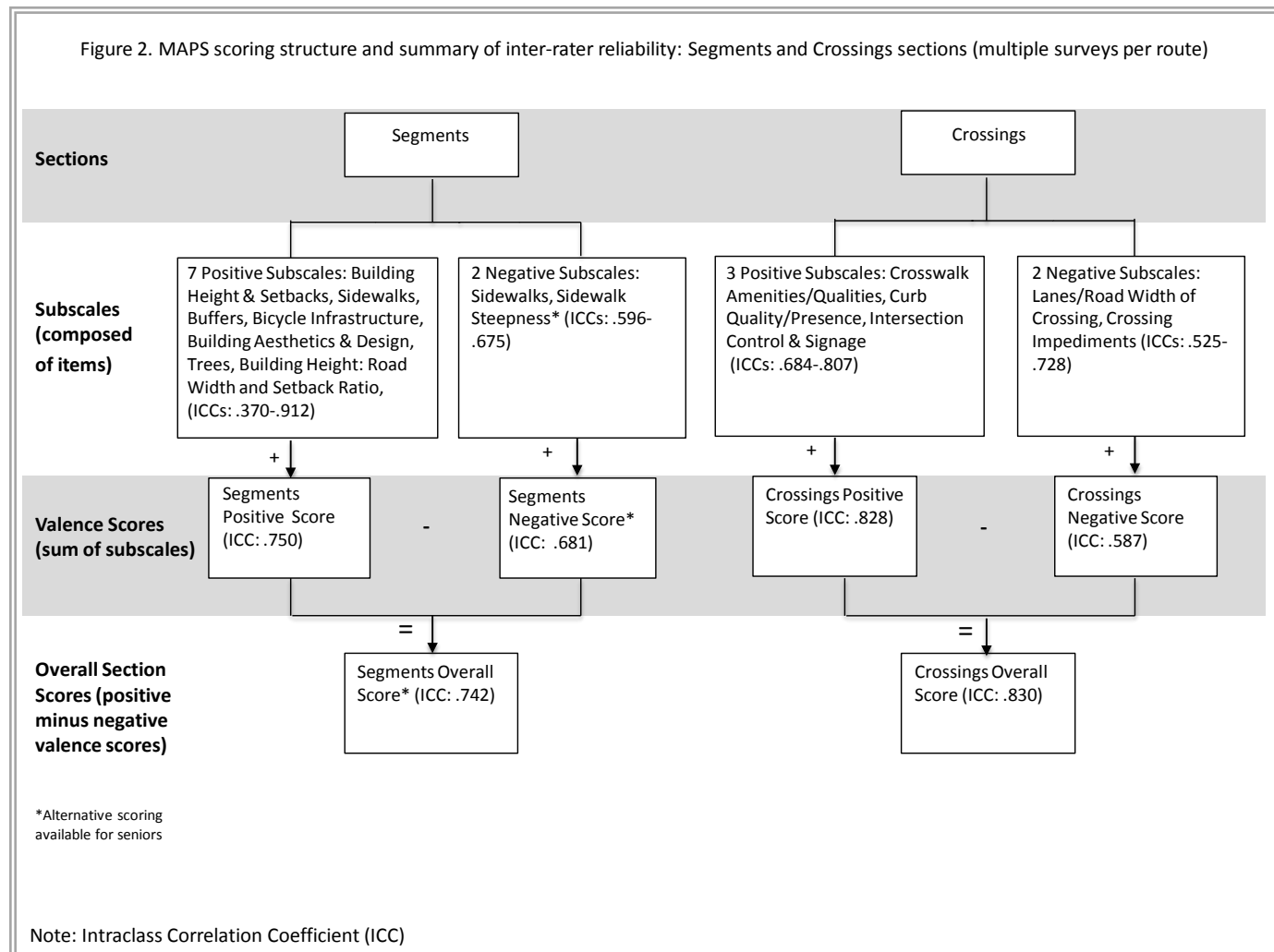
2. MAPS flowcharts illustrating scale development

Scoring structure for Route section



Scoring structure for Segments and Crossings sections

Figure 2. MAPS scoring structure and summary of inter-rater reliability: Segments and Crossings sections (multiple surveys per route)



Source: Millstein RA, Cain KL, Sallis JF, Conway TL, Geremia CM, Frank LD, Chapman J, Van Dyck D, Amberg L, Kerr J, Glanz K, Saelens BE. Development, Scoring, and Reliability of the Microscale Audit of Pedestrian Streetscapes (MAPS). Manuscript under review.

A data dictionary illustrating the variable names and coding for all items recodes, transformations, subscales, valence scores and overall scores can be found in the Appendix on page 47.

H. Scoring Documentation

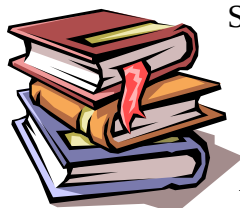
1. Recoding and subscale syntax

SPSS syntax has been created to achieve the recoding and scale creation. See “MAPS recode subscale syntax” at <http://sallis.ucsd.edu/measures/maps>.

2. Person-level aggregation syntax

SPSS syntax has been created to combine multiple segments and crossings for a person using a few methods: mean of all segments/crossings and the best possible score on a positive or negative subscale, valence or overall score across multiple segments/crossings. See “MAPS Person-level aggregation syntax” at <http://sallis.ucsd.edu/measures/maps>.

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J. Appendices



MAPS survey development: Item References Land use/destinations (Route section)

MAPS items	Source	Modification for MAPS?
1-4	PRC-HAN [Kealey 2005, Caughy 2001]	No
5	Created by investigative team	N/A
6a-ad	PRC-HAN	Yes, response format and types of land uses: added 'Specialty Food Store', 'School', 'Casino'
7	Created by investigative team	N/A

Streetscape (Route section)

MAPS items	Source	Modification for MAPS?
1	PRC-HAN	Yes, removed non-relevant response options; count for each
2	PRC-HAN	Yes, changed 'none' to 'neither'
2	Created by investigative team	N/A
3	PRC-HAN	Yes, changed to select the highest speed limit to get route level estimate
4	PRC-HAN	Yes, removed 'cul-de-sac' as an option; count for each
5-6	PRC-HAN	No
7	PRC-HAN	Yes, added 'kiosks or information booths'
8	Created by investigative team	N/A

Aesthetics and Social (Route section)

MAPS items	Source	Modification for MAPS?
1-2	PRC-HAN	Yes, split item to assess separately hardscape and softscape features
3	PRC-HAN	Yes, removed 'artistic' because asked about in above items
4-5	PRC-HAN	Yes, modified wording of question and response format accordingly
6a-h	PRC-HAN	No
6i-j	Created by investigative team	N/A
7-8	PRC-HAN	No
9	PRC-HAN	Yes, removed response options likely dependent upon time of day
10	PRC-HAN	Yes, simplification of this item to make it less complicated to rate and less temporal

Segments

MAPS items	Source	Modification for MAPS?
1	PRC-HAN	Yes, only one side
2	PRC-HAN	Yes, only one side; take out ‘both’ option
3a	PRC-HAN	Yes, only one side
3b	Created by investigative team	N/A
4-9	PRC-HAN	Yes, only one side
10	Created by investigative team	N/A
11 (one-way/two-way)	Irvine-Minnesota [Boarnet 2005]	No
12	PRC-HAN	Yes, only one side; took out “in street option”
13-14	PRC-HAN	Yes, only one side
15 (bicycle signs)	PIN3 Neighborhood Audit Instrument [Evenson 2009]	No
16 (skateboard signs)	Created by investigative team	N/A
17-18	Irvine-Minnesota	No
19-22 (material)	Observational Validation of Urban Design Measures for New York City [Ewing 2005]	No
23-28	Created by investigative team	N/A

Crossings

MAPS items	Source	Modification for MAPS?
1-3	PRC-HAN	No
4	PRC-HAN	Yes, take out estimate of adequacy of timing to cross
5	PRC-HAN	Yes, changed response options to be consistent with crossing level and non temporal
6	Created by investigative team	N/A
7a-c	PRC-HAN	Yes, removed ‘map or info kiosk’ and ‘large print street signs’
8a-e	PRC-HAN	Yes, combined ‘stop lines’ and ‘additional warning’ option; added ‘different material than road’ option
9	Created by investigative team	N/A
10	PRC-HAN	No
11	PRC-HAN	Yes, changed ‘refuge islands’ to ‘protected refuge islands’; removed ‘center median strip’, ‘especially wide lanes’ and ‘angled intersection’
12	PRC-HAN	Removed ‘missing or faded street signs’

MAPS glossary



General Definitions (in alphabetical order)

Listed below are the basic definitions of the components and aspects that are used to rate specific elements.

Accent Colors: Colors used for building trims and roofs, street objects, awning signs, etc (on both sides of the street).

Angled Parking: Vehicles parked in spaces at a 30 or 45 degree angle relative to the direction of travel lanes.

Apartments: A room or suite of rooms designed as a residence and generally located in a building occupied by more than one household. Apartments typically have one main entrance, one main address with apartment numbers. **Condominiums:** A building or complex in which units of property, such as apartments, are owned by individuals and common parts of the property, such as the grounds and building structure, are owned jointly by the unit owners.

Apartments above retail: Apartments located above the street on top of commercial retail destinations.

Buffer: Separates vehicular and pedestrian zones parallel to the edge of paved roads. They often occupy space between traffic lanes and walking paths that is not intended for either vehicle traffic or walkers. Any buffer on a segment, no matter how long, will be counted.

Buffer width: This is measured by calculating the distance the buffer covers from the curb or edge of street segment to the primary walking surface. Variations in buffer width along a single street segment are common, so record the most typical buffer width.

Big Box Store (e.g., Target, Wal-Mart): A large retail store whose physical layout resembles a large square or box when seen from above. A big-box store is characterized by a large amount of floor space (generally more than 50,000 square feet), a wide array of items available for sale, and its location in suburban areas.

Building height: The number of floors, including the roof floor of buildings with slanted roofs and dormers and any visible sunken floors.

Building Setback from the sidewalk/walkway: Building setback means the required separation between a lot line (and/or right-of-way line) and a building or structure.

Countdown Signal: Both pedestrian triggered and automatic signaling systems are programmed to indicate safe crossing for specified periods of time.

Crossing: occurs when the rater must go through an intersection, whether a pedestrian crossing exists or not.

Cross-Slope: A sideways slope that is unavoidable for the pedestrian to encounter. The steepest unavoidable cross-slope that affects walkers will not necessarily be the driveway/curb slope unless it can't be avoided.

Cul-de-sac/Court: A dead-end street with only one inlet/outlet. They are created to limit through-traffic in residential areas. While some cul-de-sacs provide no possible passage except in and out of their road entry, others allow cyclists, pedestrians or other non-automotive traffic to pass through connecting easements or paths.

Dead-end street: A street with only one way in or out.

Dormitory: A college or university building containing living quarters for students.

Duplex: Duplexes typically have different front doors for each unit and different main addresses.

Evenly spaced trees: Trees are spaced in equal increments along the walkway or buffer – planted purposefully.

Heave: Uneven or raised portion of the sidewalk that could be a trip hazard. Usually caused by tree roots or soil expansion after a period of frost.

High-visibility striping: Usually indicated by ladder or diagonal striping or unique lighting, striping for the crosswalk that is more visible to drivers than simple parallel lines.

Informal path: Must intersect the street segment and provide a path to a destination that is different and shorter than the network (e.g., alley, dirt path to a park).

Intersection: The meeting point of two or more street segments.

Marked crosswalk: A crosswalk is a designated point on a [road](#) at which some means are employed to assist [pedestrians](#) wishing to cross. They are designed to keep pedestrians together where they can be seen by [motorists](#), and where they can cross most [safely](#) with the flow of [vehicular traffic](#). Pedestrian crossings are often at [intersections](#), but may also be at other points on busy roads that would otherwise be perilous to attempt to cross.

Mobile Homes: [Prefabricated](#) homes built in factories, then installed at the home site.

Multi-unit homes: Built for more than one family (duplexes, town homes, or row houses).

Number of trees: Trees planted in the buffer, walkway, or setback (within 5 feet of the sidewalk or pathway). Count trees that are more than 5 feet away if they provide shade for the sidewalk/pathway (i.e. at the edge of front yards).

On-street 90 degree: Vehicles must turn into the parking slip at a right angle.

Parallel parking: Parallel to curb means the vehicle parks on the street facing the same direction that traffic flows.

Parking garages: Enclosed structures designed for vehicular parking. They can be single or multi-storied structures. They may have simple and unassuming facades or decorative ones. A small lot has less than 30 spaces, while medium or large lots have more than 30 spaces.

Poor Condition of Crossing Surface: Pedestrian would need to look down at the ground to feel confident that they could cross without encountering a trip hazard.

Predominant Façade Colors: Colors used for the building's façade (on both sides of the street).

Raised crosswalks: Indicate the crossing path by a surface slightly elevated from the street pavement.

Raised Median or Refuge Island: An elevated area in the middle of the crosswalk or crosswalk area of a roadway. Sometimes fitted with a gap to allow pedestrians to walk through at a crosswalk.

Retirement/Senior living facility: A private multi-residence a housing facility that provides living quarters and care for the elderly.

Route: Begins on the neighborhood street nearest to a participant's home. The route will extend ¼ mile in a specified direction. In an apartment or condo complex, the rater will begin at the entrance to the complex on the main street. The rater will not have to enter the grounds to locate the participant apartment or condo unless necessary to identify the entrance for that person (assuming multiple entrances).

Segment: A section of street or road between two crossings.

Shopping Arcade: A shopping arcade is a row of commercial shops that are easily accessible from the sidewalk or walkway and where **only** pedestrian traffic is accessible. The area can be covered or not and can be inside.

Shopping Mall: A building or set of buildings which contain retail units, with interconnecting walkways enabling visitors to easily walk from unit to unit.

Sidewalk obstructions: Objects that disrupt the normal flow of pedestrian traffic. Some obstructions are permanent. This means the obstruction narrows the walkway to less than 4 feet and cannot be easily removed from its location (e.g., fire hydrants, trees or light posts). Some obstructions are temporary, meaning, they can be removed if necessary with relatively little effort or effect on the sidewalk (e.g., sandwich signs, parked cars or garbage cans). Sidewalk obstructions must be in the walkway space, not in the buffer.

Single-family homes: A structure designed to house only a single family.

Strip Mall: An open area shopping center where the stores are arranged in a row, with a sidewalk in front. They are typically developed as a unit and have large parking lots in front. They face major traffic arterials and tend to be self-contained with few pedestrian connections to surrounding neighborhoods.

Stop Lines on Road: Striping intended for **traffic use** at an intersection or crossing, indicating where vehicles should stop. Usually lines that extend across half of an intersection (for two-way roads).

Textured pavement: Crosswalks characterized by variations in the material along the crosswalk that distinguishes it from the street portion dedicated to vehicular traffic.

Traffic Calming: Infrastructure with the purpose of reducing vehicle speeds and improving safety for drivers and pedestrians (e.g., traffic calming signs, traffic circles, speed tables, speed humps, curb extensions, roll-over curbs, drainage ditches, instructional signs for pedestrians, crosswalk signs, or other pedestrian signage). Designed measures compel drivers to slow down, or act to exclude or divert traffic altogether.

Traffic circles: Designed to slow traffic speed through an intersection. They are elements placed in the center of an intersection, which diverts traffic around the center of the intersection.

Tree Coverage: The percentage of the total **length** of the walkway that is covered by the total cumulative canopy from trees, awnings, or other structures that would provide shade to the walkway.

Trip Hazard: An increased likelihood of tripping due to a raising or lowering in the walkway. A hazard could be due to plants, tree roots, or general erosion.

Unanticipated mid-segment crossing: A pedestrian crossing located mid-segment (not at an intersection). Typically found near schools or other pedestrian destinations.

Unevenly spaced trees: Trees are spaced in an uneven or random pattern – not purposeful for shade/aesthetics.

Faded or Worn Crosswalk: Majority of crosswalk within direct route of traffic is **not** clearly visible.

Sample Field Letter (on letterhead, to be provided to residents if requested)

To Whom It May Concern,

There is increasing interest in improving the health of those in our community through the promotion of healthy eating and physical activity. As a part of this overall effort, we are studying how the neighborhood environment affects what people eat and how much physical activity people are getting in their neighborhoods. This study is called the Neighborhood Impact on Kids Project and it is funded by the National Institutes of Health. As health researchers at San Diego State University & Seattle Children's Hospital we are looking at the characteristics of different neighborhoods in San Diego and surrounding areas.

We are visiting neighborhoods in this area to look at what is offered and what makes each unique. We are **not** inspectors or evaluators. As researchers, we follow strict rules to protect any information we collect. We are observing amenities and environment only.

Thank you for allowing us to spend some time observing your neighborhood to record this information. If you have any questions or concerns, please visit our website www.nikproject.org.

Best regards,

James F. Sallis, Ph.D.

Professor, Psychology
San Diego State University

Example Field Script (to be used for neighborhood residents, if prompted)

I'm a researcher at San Diego State University and we're looking at the characteristics of different neighborhoods in San Diego County to see how the neighborhood environment affects the health of its residents.

MAPS Observation Procedures

- When you arrive in the office at the beginning of your shift, check in to collect your observation materials for the day. You will have: directions to each of your destinations, map(s) of your assigned ratings with all locations marked, extra copies of the observation surveys, an inclinometer, stopwatch and a Thomas Guide.
- In the field:
 - ✓ Wear comfortable shoes and clothes and protect yourself from the elements. Be safe and use your best judgment in that regard.
 - ✓ You need to complete every route that you start, so pay attention to how much time is left before the end of your shift. If you don't have enough time to complete a participant route, don't start rating it.
 - ✓ After completing but before leaving a route, scroll through the tool again. Be sure to fill in any blank fields before you leave. Please complete the tools in pen and make sure to write legibly.
 - ✓ You will need to make note of any shared segments and crossings and debrief with a supervisor at the end of your shift to reconcile ID#s. Please count on spending 30 minutes at the end of your shift doing this.
- On the map, you will fill out the following information:
 - ✓ Number of segments, crossings, cul-de-sacs, and routes that you complete for each route ID. You are responsible for turning in complete surveys.
- When you arrive back at the office after your shift, you will turn in your map(s), completed survey tools, directions, inclinometer, stopwatch, and the Thomas Guide.

MAPS Data Entry Dictionary: variable names and item-level coding

Route: Destinations and Land Use Section

Item	Item Content	Coding
LU1	How is audit information collected?	Foot (walked route) = 1 Auto (drove route) = 2 Both = 3
LU2a	What parking facilities are present? None	No = 0 Yes = 1
LU2b	What parking facilities are present? On-street, parallel, or angled	No = 0 Yes = 1
LU2c	What parking facilities are present? Small lot or garage	No = 0 Yes = 1
LU2d	What parking facilities are present? Med to large lot or garage	No = 0 Yes = 1
LU3a	Single family homes	No = 0 Yes = 1
LU3b	Multi-unit homes (duplex,4plx)	No = 0 Yes = 1
LU3c	Apartments or condominiums	No = 0 Yes = 1
LU3d	Apartments above street retail	No = 0 Yes = 1
LU3e	Retirement/Senior living facility	No = 0 Yes = 1
LU3f	Other	No = 0 Yes = 1
LU4	How many non-residential buildings are adjacent to the pedestrian walkway or sidewalk and/or street?	0% = 1 1-33% = 2 34-66% = 3 67-99% = 4 100% = 5 N/A (all residential) = 6 N/A (no walkway) = 7
LU5	How many of the non-residential buildings have parking lots or drives between the pedestrian walkway or sidewalk along the street and their entrances?	0% = 1 1-33% = 2 34-66% = 3 67-99% = 4 100% = 5 N/A (all residential) = 6 N/A (no walkway) = 7
LU6a	Food-related uses: Fast food restaurant	0 = 0 1 = 1 2+ = 2
LU6b	Food-related uses: Sit-down restaurant	0 = 0 1 = 1 2+ = 2
LU6c	Food-related land uses: Grocery/supermarket	0 = 0 1 = 1 2+ = 2

LU6d	Food-related land uses: Convenience store (incl. gas station)	0 = 0 1 = 1 2+ = 2
LU6e	Food-related uses: Café or coffee shop	0 = 0 1 = 1 2+ = 2
LU6f	Food-related land uses: Liquor/alcohol store	0 = 0 1 = 1 2+ = 2
LU6g	Food-related uses: Big box store	0 = 0 1 = 1 2+ = 2
LU6h	Food-related uses: Specialty food store	0 = 0 1 = 1 2+ = 2
LU6i	Retail and service-oriented land uses: Pharmacy or drug store	0 = 0 1 = 1 2+ = 2
LU6j	Retail and service-oriented land uses: Bank or credit union	0 = 0 1 = 1 2+ = 2
LU6k	Retail and service-oriented land uses: Health-related professional	0 = 0 1 = 1 2+ = 2
LU6l	Retail and service-oriented land uses: Entertainment	0 = 0 1 = 1 2+ = 2
LU6m	Retail and service-oriented land uses: Other service	0 = 0 1 = 1 2+ = 2
LU6n	Retail and service-oriented land uses: Other retail	0 = 0 1 = 1 2+ = 2
LU6o	Government or community land use: Health or social services	0 = 0 1 = 1 2+ = 2
LU6p	Government or community land use: Library/museums	0 = 0 1 = 1 2+ = 2
LU6q	Government or community land use: Post office	0 = 0 1 = 1 2+ = 2
LU6r	Government or community land use: Senior center	0 = 0 1 = 1 2+ = 2
LU6s	Government or community land use: Place of worship	0 = 0 1 = 1 2+ = 2
LU6t	Government or community land use: School	0 = 0 1 = 1 2+ = 2

LU6u	Other land use: Warehouse/factory/industrial	0 = 0 1 = 1 2+ = 2
LU6v	Other land use: Abandoned building	0 = 0 1 = 1 2+ = 2
LU6w	Other land use: Unmaintained lot/field	0 = 0 1 = 1 2+ = 2
LU6x	Other land use: Casino	0 = 0 1 = 1 2+ = 2
LU6y	Recreational land use: Community garden	0 = 0 1 = 1 2+ = 2
LU6z	Recreational land use: Private indoor	0 = 0 1 = 1 2+ = 2
LU6aa	Recreational land use: Public indoor	0 = 0 1 = 1 2+ = 2
LU6ab	Recreational land use: Private outdoor	0 = 0 1 = 1 2+ = 2
LU6ac	Recreational land use: Public outdoor pay	0 = 0 1 = 1 2+ = 2
LU6ad	Recreational land use: Public park	0 = 0 1 = 1 2+ = 2
LU7a	Shopping centers: Shopping mall	No = 0 Yes = 1
LU7b	Shopping centers: Strip mall	No = 0 Yes = 1
LU7c	Shopping centers: Shopping arcade	No = 0 Yes = 1

Route: Streetscape Section

Item	Item Content	Coding
SS1a	Number of public transit stops: Bus stops	#
SS1b	Number of public transit stops: senior transit/paratransit	#
SS2_1a	Transit stop #1: Route #	text
SS2_1b	What is available at each transit stop? Transit stop #1 Bench	No = 0 Yes = 1
SS2_1c	What is available at each transit stop? Transit stop #1 Covered shelter	No = 0 Yes = 1

SS2_1d	What is available at each transit stop? Transit stop #1 Timetable	No = 0 Yes = 1
SS2_2a	Transit stop #2: Route #	text
SS2_2b	What is available at each transit stop? Transit stop #2 Bench	No = 0 Yes = 1
SS2_2c	What is available at each transit stop? Transit stop #2 Covered shelter	No = 0 Yes = 1
SS2_2d	What is available at each transit stop? Transit stop #2 Timetable	No = 0 Yes = 1
SS2_3a	Transit stop #3: Route#	Text
SS2_3b	What is available at each transit stop? Transit stop #3 Bench	No = 0 Yes = 1
SS2_3c	What is available at each transit stop? Transit stop #3 Covered shelter	No = 0 Yes = 1
SS2_3d	What is available at each transit stop? Transit stop #3 Timetable	No = 0 Yes = 1
SS2_4a	Transit stop #4: Route#	Text
SS2_4b	What is available at each transit stop? Transit stop #4 Bench	No = 0 Yes = 1
SS2_4c	What is available at each transit stop? Transit stop #4 Covered shelter	No = 0 Yes = 1
SS2_4d	What is available at each transit stop? Transit stop #4 Timetable	No = 0 Yes = 1
SS3a	Is there a posted speed limit along the route? Regular 0-45spd limit	No = 0 Yes = speed limit (text)
SS3b	Is there a posted speed limit along the route? Special zone 0-35 speed limit	No = 0 Yes = speed limit (text)
SS4a	What other street characteristics are present? Traffic calming (signs, circles, speed tables, speed humps, curb)	#
SS4b	Roll-over curbs (if whole segment = 1)	#
SS4c	Drainage ditches (count one side of street)	#
SS4d	Instructional signs for pedestrians	#
SS4e	Crosswalk signage or other pedestrian signage (for drivers)	#
SS5	Are street lights installed?	None = 1 Some = 2 Ample = 3
SS6	How many driveways or alleys are there? (none, 1-2, 3-5, 6+)	None = 1 1-2 = 2 3-5 = 3 6+ = 4
SS7a	Presence of street amenities: Building overhangs that provide shelter...	No = 0 Yes = 1

SS7b	Presence of street amenities: Trash bins	No = 0 Yes = 1
SS7c	Presence of street amenities: Benches/places to sit	No = 0 Yes = 1
SS7d	Presence of street amenities: Bicycle racks	No = 0 Yes = 1
SS7e	Presence of street amenities: Working drinking fountains	No = 0 Yes = 1
SS7f	Presence of street amenities: Working public telephones	No = 0 Yes = 1
SS7g	Presence of street amenities: Kiosks or info booths	No = 0 Yes = 1
SS8	Presence of any mid-segment street crossing.	No = 0 Yes = 1

Route: Aesthetics and Social Section

Item	Item Content	Coding
A1	Do you observe pleasant hardscape features, such as fountains, sculptures, or art (public or private)?	No = 0 Yes = 1
A2	Do you observe softscape features such as gardens or landscaping?	No = 0 Yes = 1
A3	Are there observable historic or cultural features along the route?	No = 0 Yes = 1
A4	Are the buildings well-maintained? (%)	0% = 1 1-49% = 2 50-99% = 3 100% = 4
A5	Is the landscape well maintained? (%)	0% = 1 1-49% = 2 50-99% = 3 100% = 4
A6a	Which of the following physical disorders are present? Graffiti/tagging	No = 0 Yes = 1
A6b	Which of the following physical disorders are present? Abandoned cars	No = 0 Yes = 1
A6c	Which of the following physical disorders are present? Buildings with broken/boarded windows	No = 0 Yes = 1
A6d	Which of the following physical disorders are present? Drug paraphernalia	No = 0 Yes = 1
A6e	Which of the following physical disorders are present? Broken glass	No = 0 Yes = 1
A6f	Which of the following physical disorders are present? Beer/liquor bottles/cans	No = 0 Yes = 1
A6g	Which of the following physical disorders are present? Litter in yards	No = 0 Yes = 1
A6h	Which of the following physical disorders are present? Noticeable/excessive litter in street/sidewalk	No = 0 Yes = 1

A6i	Which of the following physical disorders are present? Neighborhood watch signs	No = 0 Yes = 1
A6j	Which of the following physical disorders are present? Signage for commercial destinations or parks	No = 0 Yes = 1
A7	Rate the extent of physical disorder	None = 1 A little = 2 Some = 3 A lot = 4
A8	Rate the extent of social disorder	None = 1 A little = 2 Some = 3 A lot = 4
A9a	Other obstructions to walking: railroad tracks	No = 0 Yes = 1
A9b	Other obstructions to walking: Highway nearby	No = 0 Yes = 1
A9c	Other obstructions to walking: Other	No = 0 Yes = 1
A10	Presence of anyone walking?	No = 0 Yes = 1

Segments Section

(Each item should be prefaced by the Segment number – this table shows Segment 1 =S1_X).

Item	Item Content	Coding
S1_1	Is a sidewalk present?	No = 0 Yes = 1
S1_2	What is the width of the majority of the sidewalk?	<3 feet = 1 3-5 feet = 2 >5 feet = 3 No sidewalk = -777
S1_3	Is there a <u>buffer</u> present?	No sidewalk = -777 No = 0 Yes = 1
S1_3b	How wide is the majority of the buffer?	<3 feet = 1 3-5 feet = 2 >5 feet = 3 No sidewalk = -777
S1_4	Is the sidewalk <u>continuous</u> within the segment?	No = 0 Yes = 1 No sidewalk = -777
S1_5a	Are there poorly maintained sections of the sidewalk that constitute <u>trip hazards</u> ?(e.g, heaves, misalignment, cracks, overgrowth) <u>Minor- moderate</u>	None = 1 One = 2 A few = 3 A lot = 4 No sidewalk = -777
S1_5b	Are there poorly maintained sections of the sidewalk that constitute <u>trip hazards</u> ?(e.g, heaves, misalignment, cracks, overgrowth) <u>Major</u>	None = 1 One = 2 A few = 3 A lot = 4 No sidewalk = -777

S1_6a	How steep is the sidewalk at the steepest point in the segment? (<i>excluding heaves</i>)	# No sidewalk = -777
S1_6b	How much of the segment is at or near this level of steepness (follow-up question to S1_6a)?	Little (1-25%) = 1 Some (26-75%) = 2 Most or all (76-100%) = 3 No sidewalk = -777
S1_6c	If answer to 6(b) is "Little," provide a steepness measure that represents the majority of the segment	# No sidewalk or N/A = -777
S1_7	What is the steepest unavoidable <u>cross-slope</u> that affects walkers?	# No sidewalk = -777
S1_8	Are there <u>permanent obstructions</u> in the sidewalk? (<i>e.g., telephone poles, trees, café tables, shrubs, basketball hoops</i>)	None = 1 Some = 2 Many = 3 No sidewalk = -777
S1_9	Are the <u>temporary obstructions</u> in the sidewalk? (<i>e.g., parked cars, sandwich boards, garbage cans</i>)	None = 1 Some = 2 Many = 3 No sidewalk = -777
S1_10	How many traffic lanes are present (include all lanes that traffic can use; choose most predominant)?	#
S1_11	Is the street predominantly one-way or two-way?	One-way = 1 Two-way = 2
S1_12a	If no sidewalk, is there any other place to walk that is safe from traffic? Unpaved pathway (goat path)	No = 0 Yes = 1 Sidewalk=-777
S1_12b	If no sidewalk, is there any other place to walk that is safe from traffic? Street shoulder	No = 0 Yes = 1 Sidewalk=-777
S1_12c	If no sidewalk, is there any other place to walk that is safe from traffic? Buffer	No = 0 Yes = 1 Sidewalk=-777
S1_13	If no sidewalk, what is the width of the place on which one could safely walk?	None = 1 <4 feet = 2 ≥4 feet = 3 N/A = -777
S1_14	Is there a <u>marked bicycle lane</u> marked with a line or a raised curb?	No = 0 Yes = 1
S1_15	Are there any signs indicating bicycle use (share the road, etc.)?	No = 0 Yes = 1
S1_16	Are there any signs or structures discouraging skateboard usage?	No = 0 Yes = 1
S1_17	Is there an informal path (shortcut), not on a cul-de-sac which connects to something else?	No = 0 Yes = 1
S1_18a	Is this a dead-end street?	No = 0 Yes = 1
S1_18b	Is there a paved or informal path at the end of the cul-de-sac or dead-end street which connects to something else (follow-up question to S1_18a)?	No = 0 Yes = 1 N/A = -777
S1_19	Estimate the proportion of street segment that has ground floor or street-level windows within 40 feet of	1-25% = 1 26-50% = 2

	sidewalk/walkway (or street	51-75% = 3 76-100% = 4 No sidewalk = -777
S1_20	How many different predominant building façade colors exist on the street segment? (<i>Count both sides of the street</i>)	1 = 1 2-3 = 2 4-6 = 3 >6 = 4 No building = -777
S1_21	How many different building accent colors exist on the street segment? (<i>Count both sides of the street</i>)	1 = 1 2-3 = 2 4-6 = 3 >6 = 4 No building = -777
S1_22	How many different predominant building materials (e.g., brick, concrete, steel, wood) exist along the street segment? (<i>both sides of street</i>)	1 = 1 2-3 = 2 4-6 = 3 >6 = 4 No buildings = -777
S1_23	How many trees exist within 5 feet of either side of the sidewalk/pathway (can be in buffer or setback; also count trees that are more than 5 feet away if they provide shade for the sidewalk/pathway)	0-1 = 1 2-5 = 2 6-10 = 3 11-20 = 4 21+ = 5 No sidewalk = -777
S1_24	How are the trees generally spaced?	Evenly = 1 Irregularly = 2 No sidewalk = -777
S1_25	What percentage of the length of the sidewalk/walkway is covered by trees, awnings or other overhead coverage?	1-25% = 1 26-50% = 2 51-75% = 3 76-100% = 4 No coverage = 5 No sidewalk = -777
S1_26	What is the smallest building setback from the sidewalk?	No building = 1 <10 feet = 2 10-20 feet = 3 21-50 feet = 4 51-100 feet = 5 >100 feet = 6
S1_27	What is the largest building setback from the sidewalk/walkway?	No building = 1 <10 feet = 2 10-20 feet = 3 21-50 feet = 4 51-100 feet = 5 >100 feet = 6
S1_28	What is the average height of buildings? (<i>Count both sides of the street</i>)	No building = 1 1-2 stories = 2 3-5 stories = 3 6-10 stories = 4 >10 stories = 5

Crossings Section

(Each item should be prefaced by the Crossing number – this table shows Crossing 1= C1_X)

Item	Item Content	Coding
C1_1a	Intersection control: Yield signs	No = 0 Yes = 1
C1_1b	Intersection control: Stop signs	No = 0 Yes = 1
C1_1c	Intersection control: Traffic signal	No = 0 Yes = 1
C1_1d	Intersection control: Traffic circle	No = 0 Yes = 1
C1_1e	Intersection control: N/A (Unanticipated mid-segment crossing)	No = 0 Yes = 1
C1_2	Number of legs at intersection	T-intersection = 1 4-way = 2 >4-way = 3
C1_3a	Signalization: Green arrows for dedicated vehicle turn	No = 0 Yes = 1
C1_3b	Signalization: Pedestrian walk signals	No = 0 Yes = 1
C1_3c	Signalization: Push buttons	No = 0 Yes = 1
C1_3d	Signalization: Countdown signal	No = 0 Yes = 1
C1_3e	Signalization: Audible walk signal	No = 0 Yes = 1
C1_4	Crosswalk timing	# of seconds No crosswalk = -777 No signal = -778
C1_5a	Pre-crossing curb	Ramp lines up w/xing = 1 Ramp does not line up = 2 No ramp = 3
C1_5b	Post-crossing curb	Ramp lines up w/xing = 1 Ramp does not line up = 2 No ramp = 3
C1_6	Gutters present in crossing	No = 0 Yes = 1
C1_7a	Other characteristics of crossing: Steep slope or cross-slope	No = 0 Yes = 1
C1_7b	Other characteristics of crossing: Temporary obstructions	No = 0 Yes = 1
C1_7c	Other characteristics of crossing: Crossing aids	No = 0 Yes = 1
C1_8a	Crosswalk treatment: Marked crosswalk	No = 0 Yes = 1
C1_8b	Crosswalk treatment: High-visibility striping	No = 0 Yes = 1
C1_8c	Crosswalk treatment: Stop lines on road or additional crosswalk warnings	No = 0 Yes = 1

C1_8d	Crosswalk treatment: Raised crosswalk	No = 0 Yes = 1
C1_8e	Crosswalk treatment: Different material than road	No = 0 Yes = 1
C1_9	Bike lane crosses the crossing?	No = 0 Yes = 1
C1_10	Distance of crossing leg, including all potential parking and turn lanes (# lanes)	#
C1_11a	Features: Specifically identified lanes turning into crossing-right turn	No = 0 Yes = 1
C1_11b	Features: Specifically identified lanes turning into crossing-left turn	No = 0 Yes = 1
C1_11c	Features: Protected refuge islands	No = 0 Yes = 1
C1_11d	Features: One-way streets through crossing	No = 0 Yes = 1
C1_11e	Features: Curb extensions	No = 0 Yes = 1
C1_12a	Misc problems: Lack of lampposts or street lamps	No = 0 Yes = 1
C1_12b	Misc problems: Poor condition of crossing surface	No = 0 Yes = 1
C1_12c	Misc problems: Poor visibility at corners	No = 0 Yes = 1
C1_12d	Misc problems: Faded or worn crosswalk markings	No = 0 Yes = 1
C1_12e	Misc problems: Unanticipated mid-segment crossing	No = 0 Yes = 1
C1_12f	Misc problems: Other	No = 0 Yes = 1
C1_12f1	“other” reason (if above is applicable)	Text

Cul-De-Sac Section

Item	Item Content	Coding
D1	How close is cul-de-sac or dead-end to participant's home?	On the Cds = 1 Adjacent = 2 <200 feet away = 3 >200 feet away = 4
D2	How big is cul-de-sac at its largest diameter?	<50 feet = 1 51-100 feet = 2 101-200 feet = 3 >200 feet = 4
D3a	What is incline/grade of cul-de-sac at its steepest point?	#
D3b	What is incline/grade of street at opening to cul-de-sac?	#
D4	What percentage of cul-de-sac is paved?	<25% = 1 25-50% = 2

		51-75% = 3 >75% = 4
D5	For paved part, how smooth is pavement?	Not smooth = 1 Somewhat smooth = 2 Mostly smooth = 3 Very smooth = 4
D6a	What amenities exist at opening to or in cul-de-sac? Basketball hoops (number)	#
D6b	What amenities exist at opening to or in cul-de-sac? Skateboard features (number)	#
D6c	What amenities exist at opening to or in cul-de-sac? Streetlights (number)	#
D6d	What amenities exist at opening to or in cul-de-sac? Pedestrian or other safety signage	#
D6e1	What amenities exist at opening to or in cul-de-sac? Other	#
D6e2	What amenities exist at opening to or in cul-de-sac? Other (describe)	Text
D7	Can most of the cul-de-sac area be seen <u>from</u> <u>participant's home</u> ?	No = 0 Yes = 1
D8	Can most of the cul-de-sac area be seen <u>from other</u> <u>homes</u> ?	No = 0 Yes = 1
D9	Number of driveways that enter into the cul-de-sac	#
D10	Is there an island in the cul-de-sac?	No = 0 Yes = 1
D11	Is parking allowed in the area?	No = 0 Yes = 1
D12a	Is there access through the end of the cul-de-sac to another public street or area?	No = 0 Yes = 1
D12b1	If yes: what type of access? Formal path	No = 0 Yes = 1
D12b2	If yes: what type of access? Informal path	No = 0 Yes = 1
D12b3	If yes: what type of access? Informal, no path	No = 0 Yes = 1
D12c1	If yes: what is on the other side? Another street	No = 0 Yes = 1
D12c2	If yes: what is on the other side? A recreation or play area	No = 0 Yes = 1
D12c3	If yes: what is on the other side? Open space	No = 0 Yes = 1
D12c4	If yes: what is on the other side? Commercial or retail area	No = 0 Yes = 1
D12c5	If yes: what is on the other side? Other	No = 0 Yes = 1

MAPS Data Dictionary: Item Recodes and Subscale Creation

Part 1: Route

A. Route: Destinations and Land Use

Item	Item Content	Scoring
Residential Density Subscale		
ResMix	Residential Mix	Apartment over retail only =1 Apts or multi-family only =2 Mixed or other = 3 Single family only = 4 None=0
Res_Density_Mix_recode	Residential density mix recoded (points)	0=commercial 1=single family 2=multi-family only and any other mix 3=apts over retail only
Shops Subscale		
Shops	Shops Subscale Score	LU6c + LU6d + LU6f + LU6g + LU6h + LU6i + LU6n +LU7a + LU7b + LU7c
Restaurant and Entertainment Subscale		
Restaur_Ent	Restaurants and Entertainment subscale	LU6a + LU6b + LU6e + LU6l
Institutional/Services Subscale		
Institu_Svc	Institutional/Services subscale	LU6j + LU6k + LU6m
Government Services Subscale		
Govt_Svcs	Government Services subscale	LU6o + LU6p + LU6q+ LU6r
Worship Land Uses		
LU6s	Government or community land use: Place of worship	0=0 1=1 2+ =2
School Land Uses		
LU6t	Government or community land use: School	0=0 1=1 2+ =2
Public Recreation Subscale		
Public_Rec	Public Rec facilities subscale (Community garden, public indoor, public outdoor pay and public park)	LU6y + LU6aa + LU6ac + LU6ad
Private Recreation Subscale		
Private_Rec	Private Rec facilities subscale (private indoor & outdoor)	LU6z + LU6ab
Parking Land Uses (positive)		
LU2b_recode	What parking facilities are present? On-street, parallel, or angled Recoded	No = 0 Yes = 2
Positive Parking Subscale		

Pos_Parking	Positive Parking influences subscale	LU2a + LU2b_rec
Warehouse/Factory/Industrial Uses		
LU6u	Other land use: Warehouse, factory, industrial	0=0 1=1 2+ =2
Abandoned Buildings		
LU6v	Other land use: Abandoned buildings	0=0 1=1 2+ =2
Unmaintained lots and fields		
LU6w	Other land use: unmaintained lots or fields	0=0 1=1 2+ =2
Casinos		
LU6x	Other land use: Casinos	0=0 1=1 2+ =2
Parking Land Uses (negative)		
LU2c	What parking facilities are present? Small lot or garage (< 30 spaces)	No = 0 Yes = 1
Parking Land Uses (negative)		
LU2d_rec	What parking facilities are present? Medium to large lot or garage Recoded.	No = 0 Yes = 2
Positive Destinations and Land Use		
DLU_pos	Destinations and Land Use: Positive subscale	ResMix_recode + Shops + Restaur_Ent + Institu_Svc + Govt_Svc + LU6s + LU6t + Public_Rec + Private_Rec + Pos_Parking
Negative Destinations and Land Use Subscale		
DLU_neg	Negative Destinations and Land Use subscale Casino, abandoned building, unmaintained lot/field, med-large parking lot	LU6u+ LU6v + LU6w + LU6x + LU2c + LU2d_rec
Overall Destinations and Land Use		
DLU_Overall	Overall Destinations and Land Use Scale	DLU_pos – DLU_neg

Items from DLU section not used in positive or negative subscales		
LU1	How is audit information collected?	Foot (walked route) = 1 Auto (drove route) = 2 Both = 3
LU4	How many non-residential buildings are adjacent to the pedestrian walkway or sidewalk and/or street?	0% = 1 1-33% = 2 34-66% = 3 67-99% = 4 100% = 5 N/A (all residential) = 6 N/A (no walkway) = 7

LU5	How many of the non-residential buildings have parking lots or drives between the pedestrian walkway or sidewalk along the street and their entrances?	0% = 1 1-33% = 2 34-66% = 3 67-99% = 4 100% = 5 N/A (all residential) = 6 N/A (no walkway) = 7
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B. Route: Streetscape

Item	Item Content	Scoring
Positive Streetscape		
Transit_tally	Transit stop tally that includes amenities (bench, shelter, and timetable)	SS1a+SS2_1b+SS2_1c+SS2_1d+SS2_2b+SS2_2c+SS2_2d+SS2_3b+ SS2_3c+ SS2_3d+SS2_4b+ SS2_4c+ SS2_4d
Transit_tally_trichot	Transit stop tally. Trichotomized (points: 0, 1, or 2 thru highest)	0 1 2
SS3a_sign	Is there a posted speed limit along the route? Is there a sign or not? No vs. yes	No = 0 Yes = 1
SS3a_pos	Is there a posted speed limit along the route? Regular zone: Speed limit 25 mph or below.	No = 0 Yes, speed limit 25mph or less= 1
SS3b_pos	Is there a posted speed limit along the route? Special zone: Speed limit 25 mph or below.	No = 0 Yes , speed limit 25mph or less= 1
SS4a_dichot	What other street characteristics are present? Traffic calming (signs, circles, speed tables, speed humps, curb) . Dichotomized	None = 0 Any = 1
SS4d_dichot	Instructional signs for pedestrians Dichotomized	None = 0 Any = 1
SS4e_dichot	Crosswalk signage or other pedestrian signage (for drivers). Dichotomized	None = 0 Any = 1
SS5_dichot	Are street lights installed? Dichotomized	None = 0 Any = 1
Positive Streetscape Subscales		
Pos_Streetscape	Positive Streetscape subscale: Transit tally, posted speed limits, traffic calming, instructional signs, street lights, street amenities (overhangs, trash bins, benches, bike racks, drinking fountains, public telephones, kiosks, mid-segment crossings)	Transit_tally_trichot + SS3a_sign + SS3a_pos + SS4a_dichot + SS4d_dichot + SS4e_dichot + SS5_dichot + SS7a + SS7b + SS7c + SS7d + SS7e + SS7f + SS7g + SS8
Negative Streetscape		
SS1a_dichot	Number of public transit stops: Bus stops. Dichotomized none=neg)	None = 1 Any = 0
SS3a_dichot	Is there a posted speed limit along the route? Regular zone: Speed limit greater than 25 mph. Dichotomized	Lowest through 25= 0 > 25mph = 1
SS4b_dichot	Roll-over curbs (if whole segment = 1) Dichotomized	None = 0 Any (>=1) = 1

SS5_dichot_neg	Are street lights installed? Dichotomized	None = 1 Any (some and ample)= 0
SS6_dichot	How many driveways or alleys are there? Dichotomized	0-5 driveways = 0 6+ driveways = 1
Negative Streetscape Subscale		
Neg_Streetscape	Negative Streetscape subscale	SS1a_dichot + SS3a_dichot + SS4b_dichot + SS5_dichot_neg + SS6_dichot
Overall Streetscape Scale		
Streetscape_Overall	Overall Streetscape Scale	Pos_Streetscape - Neg_Streetscape

<i>Items from the Streetscape section not used in positive or negative subscales</i>		
SS1b	Number of public transit stops: senior transit/paratransit	#
SS2_1a	Transit stop (#1): Route #	text
SS2_2a	Transit stop (#2) Route #	text
SS2_3a	Transit stop (#3) Route#	text
SS2_4a	Transit stop(#4) Route#	text
SS4c	Drainage ditches (count one side of street)	#

C. Route: Aesthetics and Social

Item	Item Content	Scoring
Positive Aesthetics and Social Elements		
A5_dichot	Is the landscape well maintained? Dichotomized	0-99% = 0 100% = 1
Positive Aesthetics and Social Subscale		
Pos_AesthSoc	Positive Aesthetics and Social Subscale: Hardscape, softscape, landscaping, neighborhood watch signs, other signage for destinations	A1 + A2 + A5_dichot + A6i + A6j
Negative Aesthetics and Social Elements		
A4_dichot_neg	Are the buildings well maintained? Dichotomized	0-99% = 1 100% = 0
A7_dichot	Rate the extent of physical disorder. Dichotomized	None = 0 A little, some or a lot = 1
A8_dichot	Rate the extent of social disorder. Dichotomized	None = 0 A little, some or a lot = 1
Negative Aesthetics and Social Subscale		
Neg_AesthSoc	Negative Aesthetics and Social Subscale: Buildings not maintained, graffiti, abandoned cars, broken/boarded windows, drug paraphernalia, broken glass, litter in yards, extent physical and social disorder, obstructions to walking.	A4_dichot_neg + A6a + A6b + A6c + A6d + A6e + A6g + A7_dichot + A8_dichot + A9a + A9b
Overall Aesthetics and Social Subscale		
AesthSoc_Overall	Overall Aesthetics and Social Subscale	Pos_AesthSoc - Neg_AesthSoc

Items from the Aesthetics and Social section not used in positive or negative subscales		
A3	Are there observable historic or cultural features along the route?	No = 0 Yes = 1
A4_dichot	Is the building well maintained? Dichotomized	0-99% = 0 100% = 1
A9c	Other obstructions to walking: Other	No = 0 Yes = 1
A10	Presence of Anyone walking?	No = 0 Yes = 1
A6f	Beer/liquor bottles/cans	No = 0 Yes = 1
A6h	Noticeable/excessive litter in street/sidewalk	No = 0 Yes = 1

Overall Route Scale		
Route_Overall	Overall Route Scale	DLU_Overall + Streetscape_Overall + AesthSoc_Overall

Part 2: Segments

(Note: There are multiple segments possible per route; S1 indicates the first segment, for which the variables and subscales are listed below. For subsequent segments, use S2, S3, etc. for naming variables and subscales.)

A. Positive Subscales

Item	Item Content	Scoring
Positive Setback and Building Height		
S1_26	What is the smallest building setback from the sidewalk?	No building = 1 <10 feet = 2 10-20 feet = 3 21-50 feet = 4 51-100 feet = 5 >100 feet = 6
S1_27	What is the largest building setback from the sidewalk/walkway?	No building = 1 <10 feet = 2 10-20 feet = 3 21-50 feet = 4 51-100 feet = 5 >100 feet = 6
S1_26_27_0pts	Either setback (S1_26, S1_27) >50 ft and no building.	No = 0 Yes = 0
S1_26_27_1point	All other combinations of S1_26 and S1_27	No = 0 Yes = 1
S1_26_27_2points	Both setbacks (S1_26 and S1_27) 10-20 ft. or one setback <10 ft and one setback 10-20 ft.	No = 0 Yes = 2
S1_26_27_3points	Both setbacks (S1_26 and S1_27) <10 ft.	No = 0 Yes = 3
S1_26_27_points	Smallest and largest setback scores combined	S1_26_27_0pts + S1_26_27_1point + S1_26_27_2points + S1_26_27_3points
S1_28_trichot	What is the average height of buildings?	No building and 0-2

	Trichotomized.	stories = 0 3-5 stories = 1 6-10 stories = 2 10+stories = 3
Positive Building Height and Setbacks Subscale		
PosBldgHtSetbks_S1	Positive Setbacks/Bldg. Height: Positive subscale	S1_26_27_points + S1_28_trichot
Positive Sidewalk		
S1_2_recode	What is the width of the majority of the sidewalk? Recoded	<3 feet = 2 3-5 feet = 2 >5 feet = 3 No sidewalk= 0
S1_12a_recode	If no sidewalk, is there any other place to walk that is safe from traffic? Unpaved pathway (goat path); Recoded	No = 0 Yes = 1 NA/Sidewalk=0
S1_12b_recode	If no sidewalk, is there any other place to walk that is safe from traffic? Street shoulder; Recoded	No = 0 Yes = 1 NA/Sidewalk=0
S1_12c_recode	If no sidewalk, is there any other place to walk that is safe from traffic? Buffer; Recoded	No = 0 Yes = 1 NA/Sidewalk=0
S1_12_sum	Combination of 12a; 12b; 12c	No/ NA to 12a, 12b & 12c (no alternative walking path)= 0 Yes to 12a or 12b or 12c (alternative walking path) = 1
Positive Sidewalk Subscale		
Sidewalk_Pos_S1	Sidewalk and sidewalk alternative (combined) presence and width (#s 1, 2, 12): S1_2_recode+s1_12_sum	No sidewalk = 0 Any path = 1 Narrow sidewalk(<5 ft) = 2 Wide sidewalk (>5) = 3
Positive Buffer		
S1_3a_recode	Is there a buffer present? Recoded	No sidewalk = 0 No = 0 Yes = 1
S1_3b_dichot	How wide is the majority of the buffer? Dichotomized.	No sidewalk = 0 0-3 feet = 0 >3 feet = 1
Buffer Positive Subscale		
Buffers_Pos_S1	Buffers: Positive subscale	S1_3a_recode + S1_3b_dichot
Positive Bike Infrastructure		
S1_14_recode	Is there a <u>marked bicycle lane</u> marked with a line or a raised curb? Recoded	No = 0 Yes = 2
Bike Infrastructure Positive Subscale		
Bike_Infra_S1	Bike Infrastructure: Positive subscale	S1_14_recode + S1_15

Positive Building Aesthetics and Design		
S1_19_trichot	Proportion of street segment w/windows within 40 feet of sidewalk/walkway (or street): Trichotomized	No windows – 25% = 0 26%-75% = 1 >76% = 2
S1_20_trichot	How many different predominant building façade colors exist? Trichotomized	No building/NA or 1 color=0 2-3 colors=1 >4 colors=2
S1_21_trichot	How many different building accent colors? Trichotomized	No building/NA or 1 color=0 2-3 colors=1 >4 colors=2
S1_22_dichot	How many different predominant building materials? Dichotomized	No building/NA or 1 material=0 >2=1
Building Aesthetics & Design Positive Subscale		
BldAesthDes_S1	Building Aesthetics & Design: Positive subscale	S1_19_trichot + S1_20_trichot + S1_21_trichot + S1_22_dichot
Trees Positive		
S1_23_trichot	How many trees exist within 5 feet of either side of the sidewalk/pathway? Trichotomized	No sidewalk/NA = 0 0-1 trees = 0; 2-10 trees = 1 >11 trees = 2
S1_24_recode	How are the trees generally spaced? Recoded	Irregular or no sidewalk/NA= 0 Evenly = 1
S1_25_trichot	What percentage of sidewalk/walkway is covered by trees/other overhead coverage? Trichotomized	No coverage or no sidewalk/NA and ≤25% = 0 26%-75% = 1 >75% = 2
Trees Positive Subscale		
Trees_S1	Trees: Positive subscale	S1_23_trichot + S1_24_recode + S1_25_trichot
Informal Path or Shortcut Positive (single item, not a subscale)		
S1_17	Is there an informal path (shortcut), not on a cul-de-sac which connects to something else?	No = 0 Yes = 1
Building Height to Road Width Ratio Subscale		
BldgHt_RdWdthSetbk_Ratio_S1	Building Height: Road Width+ Setback Avgs. Ratio	S1_28_feet/RdWdth_plus_Setbk_avg_S1
BldgHt_RdWdthSetbk_Ratio_Scores_S1	Scores for the above ratio.	Lowest - .499 = 0 .50 - .999 = 1 1.0 - 1.999 = 3 2.0 - 2.999 = 2 3.0 – Highest = 1
RdWdth_plus_Setbk_avg_S1	Road width (in feet) plus setback averages	S1_10_feet + S1_26_27_feetmid_avg

S1_28_feet	Average building height –recalculated in feet (using midpoint of response option ranges). (Top of the ratio.)	No building = 0 1-2 stories = 18 3-5 stories = 48 6-10 stories = 96 >10 stories = 144
S1_10_feet	How many traffic lanes are present? Recalculated in feet.	1 = 12 2 = 24 3 = 36 4 = 48 5 = 60 6 = 72 7+ = 84
S1_26_feetmid	Smallest building setback from the sidewalk, calculated using the midpoint of response option ranges.	No building = 0 <10 feet = 5 10-20 feet = 15 21-50 feet = 35 51-100 feet = 75 >100 feet = 100
S1_27_feetmid	Largest building setback from the sidewalk, calculated, using the midpoint of response option ranges.	No building = 0 <10 feet = 5 10-20 feet = 15 21-50 feet = 35 51-100 feet = 75 >100 feet = 100
S1_26_27_feetmid_avg	Average smallest and largest setback midpoints (S1_26 and 27). (Part of the bottom of the ratio.)	Calculated numeric range

Part B. Segments: Negative Subscales

Sidewalk Negative		
S1_4_recode	Is the sidewalk <u>continuous</u> within the segment? Recoded	No = 1 Yes = 0
S1_5a_dichot	Are there poorly maintained sections of the sidewalk that constitute <u>trip hazards</u> ? Minor- moderate; Dichotomized	0-1 = 0 A few or a lot = 1
S1_5b_dichot	Are there poorly maintained sections of the sidewalk that constitute <u>trip hazards</u> ? Major; Dichotomized	0-1 = 0 A few or a lot = 1
S1_8_dichot	Are there <u>permanent obstructions</u> in the sidewalk? Dichotomized	None = 0 Some or many = 1
S1_9_dichot	Are the <u>temporary obstructions</u> in the sidewalk? Dichotomized	None = 0 Some or Many = 1
Sidewalk Negative Subscale		
Sidewalk_Neg_S1	Sidewalk : Negative subscale	S1_4recode + S1_5a_dichot + S1_5b_dichot + S1_8_dichot + S1_9_dichot
Sidewalk Slope Negative		
S1_6a_dichot_S	How steep is the sidewalk at the steepest point in the segment? Dichotomized. [For seniors]	0-6.88 = 0 6.89-highest = 1
S1_6a_dichot_C	How steep is the sidewalk at the steepest point in the	0-6.88 = 0

	segment? Dichotomized. [For children/adults]	6.89-highest = 1
S1_6b	How much of the segment is at or near this level of steepness (follow-up question to S1_6a)?	Little (1-25%) = 1 Some (26-75%) = 2 Most or all (76-100%) = 3 No sidewalk = -777
S1_6c	If answer to 6(b) is “Little,” provide a steepness measure that represents the majority of the segment	#
S1_6c_recode_S	If answer to 6(b) is “Little,” steepness measure-majority of the segment: Recoded. [For seniors] If answer to 6(b) is not “Little” there is not a separate measure of the steepness of the majority of the segment, steepness measure from s1_6a_dichot_S is recoded here.	0-3.43 = 0 3.44 - 6.88 = 1 6.89 - 8.99 = 2 8.99 – Highest = 3
S1_6c_recode_C	If answer to 6(b) is “Little,” steepness measure-majority of the segment: Recoded. [For children/adults] If answer to 6(b) is not “Little” there is not a separate measure of the steepness of the majority of the segment, steepness measure from s1_6a_dichot_S is recoded here.	0-6.88 = 0 6.89 - 8.99 = 1 8.99 – Highest = 2
S1_7_recode_S	What is the steepest unavoidable <u>cross-slope</u> that affects walkers? Recoded. [For seniors]	0 - 1.14 = 0 1.15 - 2.28 = 1 2.29 - 3.43 = 2 3.44 – Highest = 3
S1_7_recode_C	What is the steepest unavoidable <u>cross-slope</u> that affects walkers? Recoded. [For children/adults]	0 - 2.28 = 0 2.29 - 3.43 = 1 3.44 – Highest = 2
Sidewalk Slope Negative Subscale		
Sidewalk_Neg_Slope_S	Seniors Slope: Negative subscale	S1_6a_dichot_S + S1_6c_recode_S + S1_7_recode_S
Sidewalk_Neg_Slope_C	Children Slope: Negative subscale	S1_6a_dichot_C + S1_6c_recode_C + S1_7_recode_C
Negative Street Design Subscale		
S1_10_dichot	How many traffic lanes are present? Dichotomized	1-4 lanes = 1 >5 lanes = 2
S1_11_recode	Is the street predominantly one-way or two-way? Recoded	One-way = 1 Two-way = 0
Negative Street Design Subscale (Note: this subscale is not included in the overall negative sum; it can be calculated and used separately if desired.)		
Neg_Street_Des_S1	Street Design: Negative subscale	S1_10_dichot + S1_11_dichot
Positive Segments Subscale		
Segments_Pos_S1	Sum of positive segment subscales	PosBldgHtSetbks_S1 + Sidewalk_Pos_S1 + Buffers_Pos_S1 +

		Bike_Infra_S1 + BldgAesthDes_S1 + Trees_S1 + S1_17 + BldgHt_RdWdthSetbk_ Ratio_Scores_S1
Negative Segments Subscale - Senior		
Segments_Neg_Senior	Sum of negative segment subscales, for seniors	Sidewalk_Neg_S1 + Sidewalk_Neg_Slope_S_ S1
Negative Segments Subscale – Child/Adult		
Segments_Neg_Child	Sum of negative segment subscales, for youth/adults	Sidewalk_Neg_S1 + Sidewalk_Neg_Slope_C_ S1
Overall Segments Subscale - Senior		
Overall_Segment_Senior	Overall segment score for seniors	Segments_Pos_S1- Segments_Neg_Senior_S 1
Overall Segments Subscale - Child		
Overall_Segment_Child	Overall segment score for youth/adults	Segments_Pos_S1- Segments_Neg_Child_S1

Items from Segments section not used in positive or negative subscales		
S1_6b	How much of the segment is at or near this level of steepness (follow-up question to S1_6a)?	Little (1-25%) = 1 Some (26-75%) = 2 Most or all (76-100%) = 3 No sidewalk = -777
S1_13	If no sidewalk, what is the width of the place on which one could safely walk?	None = 1 <4 feet = 2 ≥4 feet = 3 N/A = -777
S1_16	Are there any signs or structures discouraging skateboard usage?	No = 0 Yes = 1
S1_18a	Is this a dead-end street?	No = 0 Yes = 1
S1_18b	Is there a paved or informal path at the end of the cul-de-sac or dead-end street which connects to something else (follow-up question to S1_18a)?	No = 0 Yes = 1 N/A = -777

Part 3: Crossings

(Note: There are multiple crossings possible per route; C1 indicates the first crossing, for which the variables and subscales are listed below. For subsequent crossings, use C2, C3, etc. for naming.)

A. Positive Subscales

Item	Item Content	Scoring
Crosswalk Amenities Positive Subscale		
CrosswalkAmenities_C1	Crosswalk amenities: Positive subscale (Crossing aids, marked crosswalk, high visibility striping, stop lines or crosswalk warnings, raised crosswalk, different material than road, protected refuge islands, curb extensions).	C1_7c + C1_8a + C1_8b + C1_8c + C1_8d + C1_8e + C1_11c + C1_11e

Curb Quality/Presence		
C1_5a_positive	Pre-crossing curb - option 1: Ramp lines up with crossing. Recoded	Ramp lines up w/xing = 1 Ramp doesn't line up = 0 No ramp = 0
C1_5b_positive	Post-crossing curb - option 1: Ramp lines up with crossing. Recoded	Ramp lines up w/xing = 1 Ramp doesn't line up = 0 No ramp = 0
Curb Quality/Presence Positive Subscale		
Curb_Qual_C1	Curb Quality and Presence Subscale	C1_5a_positive + C1_5b_positive
Intersection Control and Signage Positive Subscale		
IntsectCtrlSign_C1	Intersection Control/Signage: Positive subscale (Yield signs, stop signs, traffic signal, traffic circle, green arrows for turn lane, pedestrian walk signals, push buttons, countdown signal, audible walk signal, lanes turning into right crossing, lanes turning into left crossing, one way streets through crossing)	C1_1a + C1_1b + C1_1c + C1_1d + C1_3a + C1_3b + C1_3c + C1_3d + C1_3e + C1_11a + C1_11b + C1_11d

Part b: Crossings: Negative Subscales

Road Width Sum		
C1_10_trichot	Distance of crossing leg, including all potential parking and turn lanes. Trichotomized	1 – 2 = 0 3 – 4 = 1 5 – Highest = 2
Road Width Negative Subscale		
Road_Width_C1	Same as trichotomized road (crossing) width	C1_10_trichot
Crossing Impediments Negative		
C1_5a_negative	Pre-crossing curb-option 3: No ramp. Recoded	Ramp lines up w/xing = 1 Ramp doesn't line up = 0 No ramp = 0
C1_5b_negative	Post-crossing curb-option 3: No ramp. Recoded	Ramp lines up w/xing = 1 Ramp doesn't line up = 0 No ramp = 0
Crossing Impediments Negative Subscale		
Cross_Imped_C1	Crossing impediments: Negative subscale (no ramp pre- and post-crossing curb, gutters, steep slope or cross-slope, temporary obstructions, poor visibility at corners, faded or worn crosswalk markings)	C1_5a_negative + C1_5b_negative + C1_6 + C1_7a + C1_7b + C1_12c + C1_12d
Positive Crossing Subscale		
PosCrossChars_C1	Positive Crossing	CrosswalkAmenities_C1 + CurbQual_C1 + IntsectCtrlSign_C1
Negative Crossing Subscale		
NegCrossChars_C1	Negative Crossing	Road_Width_C1 + Cross_Imped_C1
Overall Crossing		
OverallCrossScore_C1	Overall Crossing Scale	PosCrossChars_C1 – NegCrossChars_C1

Items from Crossings section not used in positive or negative subscales		
C1_2	Number of legs at intersection	T-intersection = 1 4-way = 2 >4-way = 3
C1_4	Crosswalk timing	# of seconds No crosswalk = -777 No signal = -778
C1_5a_opt2	Pre-crossing curb-option 2: Ramp doesn't line up with crossing	Ramp does not line up = 1
C1_5b_opt2	Post-crossing curb-option 2: Ramp doesn't line up with crossing	Ramp does not line up = 1
C1_9	Bike lane crosses the crossing?	No = 0 Yes = 1
C1_12a	Misc problems: Lack of lampposts or street lamps	No = 0 Yes = 1
C1_12b	Misc problems: Poor condition of crossing surface	No = 0 Yes = 1
C1_12e	Misc problems: Unanticipated mid-segment crossing	No = 0 Yes = 1
C1_12f	Misc problems: Other	No = 0 Yes = 1
C1_12f1	"other" reason (if above is applicable)	Text

Part 4: Cul-De-Sacs

(Note: There may be multiple cul-de-sacs (CdS) per route; D1 indicates the first cul-de-sac, for which the variables and subscale are listed below. For subsequent cul-de-sacs, use D2, D3, etc., for naming.)

Item	Item Content	Scoring
D1_1_dichot	How close is cul-de-sac or dead-end to participant's home? Dichotomized.	On the CdS = 1 Adjacent = 1 <200 feet away = 0 >200 feet away = 0
D1_2_dichot	How big is cul-de-sac at its largest diameter? Dichotomized.	<50 feet = 0 51-100 feet = 1 101-200 feet = 1 >200 feet = 1
D1_3a_dichot	What is incline/grade of cul-de-sac at its steepest point? Dichotomized.	0 thru 6.88 = 1 6.89 thru highest = 0
D1_3b_dichot	What is incline/grade of street at opening to cul-de-sac? Dichotomized.	0 thru 6.88 = 1 6.89 thru highest = 0
D1_5_dichot	For paved part, how smooth is pavement? Dichotomized.	Not smooth = 0 Somewhat smooth = 0 Mostly smooth = 0 Very smooth = 1
D1_6_sum	Total amenities: basketball hoops + skateboard features + streetlights + pedestrian or safety signage	#
D1_6_sum_trichot	Total amenities: sum: Trichotomized.	0 = 0 1 = 2

		>1 = 2
D1_11_recode	Is parking allowed in the area? Recoded.	No = 1 Yes = 0
Overall CulDeSac		
OverallCdSScore_D1	Sum of all items except 4, 9, 10, 12 (closeness to participant's home, largest cul-de-sac diameter, incline/grade at steepest point, smooth pavement, total amenities, visibility of cul-de-sac area from participant's home, visibility of cul-de-sac area from other homes, parking allowed)	D1_1_dichot + D1_2_dichot + D1_3a_dichot + D1_3b_dichot + D1_5_dichot + D1_6_sum_trichot + D1_7 + D1_8 + D1_11_recode

Items not used in cul-de-sac score		
D1_4	What %age of cul-de-sac is paved?	<25% = 1 25-50% = 2 51-75% = 3 >75% = 4
D1_6e1	What amenities exist at opening to or in cul-de-sac? Other	#
D1_6e2	What amenities exist at opening to or in cul-de-sac? Other (describe)	Text
D1_9	Number of driveways that enter into the cul-de-sac	#
D1_10	Is there an island in the cul-de-sac?	No = 0 Yes = 1
D1_12a	Is there access through the end of the cul-de-sac to another public street or area?	No = 0 Yes = 1
D1_12b1	If yes: what type of access? Formal path	No = 0 Yes = 1
D1_12b2	If yes: what type of access? Informal path	No = 0 Yes = 1
D1_12b3	If yes: what type of access? Informal, no path	No = 0 Yes = 1
D1_12c1	If yes: what is on the other side? Another street	No = 0 Yes = 1
D1_12c2	If yes: what is on the other side? A recreation or play area	No = 0 Yes = 1
D1_12c3	If yes: what is on the other side? Open space	No = 0 Yes = 1
D1_12c4	If yes: what is on the other side? Commercial or retail area	No = 0 Yes = 1
D1_12c5	If yes: what is on the other side? Other	No = 0 Yes = 1

Date _____ Auditor ID# _____

Route # _____

Start Time: _____

End Time: _____

Route:

Section: Land use/destinations

Count both sides of the street

1. How is audit information collected?

- ☐ Foot (walked route)
- ☐ Auto (drove route)
- ☐ Both (walked & drove route)

2. What parking facilities are present?

Check all that apply

- ☐ None
- ☐ On-street, parallel or angled parking
- ☐ Small lot or garage (< 30 spaces)
- ☐ Medium to large lot or garage

3. What types of residential uses?

Check all that apply

- ☐ Single family houses
- ☐ Multi-unit homes (duplex, 4-plex, row house)
- ☐ Apartments or condominiums
- ☐ Apartments above street retail
- ☐ Retirement/senior living facility
- ☐ Other (mobile home, dormitory)
- ☐ None

4. How many of the non-residential buildings are adjacent to the pedestrian walkway or sidewalk and/or street?

(Adjacent to sidewalk and street means that there is not a yard, parking lot or other space blocking entrances between the sidewalk and the building)

- ☐ 0%
- ☐ 1-33% ☐ 34-66%
- ☐ 67-99% ☐ 100%
- ☐ N/A (all residential buildings)
- ☐ N/A (no pedestrian walkway/sidewalk)

5. How many of the non-residential buildings have parking lots or drives between the pedestrian walkway or sidewalk along the street and their entrances?

- ☐ 0%
- ☐ 1-33% ☐ 34-66%
- ☐ 67-99% ☐ 100%
- ☐ N/A (all residential buildings)
- ☐ N/A (no pedestrian walkway/sidewalk)

6. How many of the following types of non-residential destinations are present? (Do not double count.)

Food-related land uses

a. Fast food restaurant (*national or local chain, primarily sells burgers, fried chicken, pizza, or "Americanized" Mexican, Chinese, etc.*)

- ☐ 0 ☐ 1 ☐ 2+

b. Sit-down restaurant

- ☐ 0 ☐ 1 ☐ 2+

c. Grocery/supermarket

- ☐ 0 ☐ 1 ☐ 2

d. Convenience store (*may also be a gas station*)

- ☐ 0 ☐ 1 ☐ 2+

e. Café or coffee shop

- ☐ 0 ☐ 1 ☐ 2+

f. Liquor/alcohol store (*primarily sells alcohol, wine bar, strip club*)

- ☐ 0 ☐ 1 ☐ 2+

g. Big box store (*e.g., Home Depot, Best Buy, Sears, Super Walmart, Target*)

- ☐ 0 ☐ 1 ☐ 2+

h. Specialty Food Store (*e.g., ice cream, candy, bakery*)

- ☐ 0 ☐ 1 ☐ 2+

Retail and service oriented land uses

i. Pharmacy or drug store

- ☐ 0 ☐ 1 ☐ 2+

j. Bank or credit union

- ☐ 0 ☐ 1 ☐ 2+

k. Health-related professional (*e.g., chiropractor, Dr. office*)

- ☐ 0 ☐ 1 ☐ 2+

l. Entertainment (*e.g., movie theatre, arcade*)

- ☐ 0 ☐ 1 ☐ 2+

m. Other service (*e.g., salon, lawyer, accountant, realtor, laundry/dry cleaner, commercial mailing service*)

- ☐ 0 ☐ 1 ☐ 2+

n. Other retail (*e.g., books, clothing, hardware, video rental*)

- ☐ 0 ☐ 1 ☐ 2+

Government or community land use

o. Health or social services (*e.g., hospital, health department, community action agency, police/fire stations, city hall, etc.*)

- ☐ 0 ☐ 1 ☐ 2+

p. Library/Museums

- ☐ 0 ☐ 1 ☐ 2+

q. Post office

- ☐ 0 ☐ 1 ☐ 2+

r. Senior center

- ☐ 0 ☐ 1 ☐ 2+

s. Place of worship (*e.g., church, synagogue, convent, mosque, etc.*)

- ☐ 0 ☐ 1 ☐ 2+

t. School

- ☐ 0 ☐ 1 ☐ 2+

Other land use

u. Warehouse/factory/industrial

- ☐ 0 ☐ 1 ☐ 2+

v. Abandoned building

- ☐ 0 ☐ 1 ☐ 2+

w. Unmaintained lot/field

- ☐ 0 ☐ 1 ☐ 2+

x. Casino

- ☐ 0 ☐ 1 ☐ 2+

Recreational land use

y. Community garden

- ☐ 0 ☐ 1 ☐ 2+

z. Private indoor (*e.g., commercial gyms, dance clubs*)

- ☐ 0 ☐ 1 ☐ 2+

aa. Public indoor (*community centers*)

- ☐ 0 ☐ 1 ☐ 2+

ab. Private outdoor (*e.g., private golf course, commercial outdoor recreation*)

- ☐ 0 ☐ 1 ☐ 2+

ac. Public outdoor pay (*e.g., pool*)

- ☐ 0 ☐ 1 ☐ 2+

ad. Public park

- ☐ 0 ☐ 1 ☐ 2+

7. Shopping Centers

Check all that apply

- ☐ Shopping Mall
- ☐ Strip Mall
- ☐ Shopping Arcade
- ☐ None of the above

Route

Section: Streetscape

Count both sides of the street

1. Number of public transit stops

If NO stops, skip to 3.

(a) Bus stops _____

(b) Senior transit/paratransit _____

2. What is available at each transit stop?

Only count benches that users could be easily identified by bus drivers as waiting to ride the bus.

Route # _____

☐ Bench ☐ Covered Shelter ☐ Timetable

Route # _____

☐ Bench ☐ Covered Shelter ☐ Timetable

Route # _____

☐ Bench ☐ Covered Shelter ☐ Timetable

Route # _____

☐ Bench ☐ Covered Shelter ☐ Timetable

3. Is there a posted speed limit along the route?

If multiple, select the highest

Regular

☐ Yes _____ mph ☐ No

Special zone (*school, construction*)

☐ Yes _____ mph ☐ No

4. What other street characteristics are present?

(specify # of each type)

Check all that apply

- ☐ Traffic calming (signs, circles, speed tables, speed humps, curb extension) _____
- ☐ Roll-over curbs _____ (if whole segment = 1)
- ☐ Drainage ditches _____ (count one side of street)
- ☐ Instructional signs for pedestrian's _____
- ☐ Crosswalk signage or other pedestrian signage (for drivers) _____
- ☐ None of the Above

5. Are street lights installed?

- ☐ None
- ☐ Some (*e.g., overhead street lights on utility poles with wide spacing*)
- ☐ Ample (*e.g., regularly spaced pedestrian lampposts*)

6. How many driveways or alleys are there? Count only segment side of the street.

(Count only alleys that are wide enough to be used by cars or other vehicles that could impede pedestrian traffic.)

☐ None ☐ 1-2 ☐ 3-5 ☐ 6+

7. Presence of street amenities

Check all that apply

- ☐ Building overhangs that provide shelter from inclement weather in public space (i.e. sidewalks)
- ☐ Trash bins (public)
- ☐ Benches or other places to sit
- ☐ Bicycle racks
- ☐ Working drinking fountain
- ☐ Working public telephones
- ☐ Kiosks or information booths
- ☐ None of the Above

8. Presence of any mid-segment street crossing, where an individual could safely cross (marked by sign or crosswalk)?

☐ Yes ☐ No

Section: Aesthetics and Social

Count both sides of the street

1. Do you observe pleasant hardscape features, such as fountains, sculptures, or art (public or private)?

☐ Yes ☐ No

2. Do you observe softscape features such as gardens or landscaping (*e.g., Public: bodies of water, designated viewpoints; Private: retaining walls, bark, ponds*)?

☐ Yes ☐ No

3. Are there observable historic or cultural features along the route (*not further than one street segment away from route and can be seen from the route*)?

☐ Yes ☐ No

4. Are the buildings well maintained?

☐ 0% ☐ 1-49% ☐ 50-99% ☐ 100%

5. Is landscaping well maintained?

☐ 0% ☐ 1-49% ☐ 50-99% ☐ 100%

6. Which of the following physical disorders are present?

Check all that apply

- ☐ Graffiti/tagging (not murals)
- ☐ Abandoned cars
- ☐ Buildings with broken/boarded windows
- ☐ Drug paraphernalia
- ☐ Broken glass
- ☐ Beer/liquor bottles/cans
- ☐ Litter in yards
- ☐ Noticeable/excessive litter in street/sidewalk
- ☐ Neighborhood watch signs
- ☐ Signage for commercial destinations or parks
- ☐ None of these

7. Rate the extent of physical disorder (*question 6*)

(e.g., litter, graffiti, broken glass, abandoned cars)

- ☐ None
- ☐ A little (physical/social disorder is present)
- ☐ Some (disorder is very noticeable)
- ☐ A lot (disorder is overwhelming)

8. Rate the extent of social disorder (*e.g., stray dogs, gangs, prostitution, hostile behaviors, drug dealing, panhandlers, etc.*)

- ☐ None
- ☐ A little (physical/social disorder is present)
- ☐ Some (disorder is very noticeable)
- ☐ A lot (disorder is overwhelming)

9. Other obstructions to walking

Check all that apply

- ☐ Railroad tracks (must obstruct walkway)
- ☐ Highway nearby (within one segment from walkway)
- ☐ Other: _____
- ☐ None

10. Presence of anyone walking?

☐ Yes ☐ No

Segment: Walkway/Sidewalks

Segment ID# _____

Auditor ID # _____

Type: Residential / Commercial

Street _____ Side N S E W

Starting Cross-street: _____

Ending Cross-street: _____

1. Is a sidewalk present?

☐ Yes ☐ No

2. What is the width of the majority of the sidewalk?

☐ < 3 ft. ☐ 3-5 ft. ☐ > 5 ft. ☐ No sidewalk3. (a) Is there a buffer present?☐ Yes ☐ No

(b) How wide is the majority of the buffer?

☐ < 3 ft. ☐ 3-5 ft. ☐ > 5 ft. ☐ N/A4. Is the sidewalk continuous within the segment?☐ Yes ☐ No ☐ No sidewalk5. Are there poorly maintained sections of the sidewalk that constitute trip hazards? (e.g., heaves, misalignment, cracks, overgrowth)a. Minor - moderate☐ None ☐ One ☐ A few ☐ A lot ☐ No sidewalkb. Major☐ None ☐ One ☐ A few ☐ A lot ☐ No sidewalk6. (a) How steep is the sidewalk at the steepest point in the segment? (*Excluding heaves*)_____ degrees ☐ No sidewalk

(b) How much of the segment is at or near this level of steepness?

☐ Little (1-25%) ☐ Some (26-75%)
☐ Most or All (76-100%) ☐ No sidewalk

(c) If answer to 6(b) is "Little," provide a steepness measure that represents the majority of the segment

_____ degrees ☐ No sidewalk ☐ N/A7. What is the steepest unavoidable cross-slope that affects walkers? _____ degrees ☐ No sidewalk

Entry 1: ID# _____ Date: _____

8. Are there permanent obstructions in the sidewalk?

(e.g., telephone poles, trees, café tables, shrubs, basketball hoops)

☐ None ☐ Some ☐ Many ☐ No sidewalk9. Are there temporary obstructions in the sidewalk?

(e.g., parked cars, sandwich boards, garbage cans)

☐ None ☐ Some ☐ Many ☐ No sidewalk10. How many traffic lanes are present (include all lanes that traffic can use; choose most predominant)?☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7+

11. Is the street predominantly one-way or two-way?

☐ 1-way ☐ 2-way12. If no sidewalk, is there any other place to walk that is safe from traffic?☐ Yes
☐ Unpaved pathway (goat path)
☐ Street shoulder
☐ Buffer
☐ No
☐ N/A Sidewalk present13. If no sidewalk, what is the width of the place on which one could safely walk? (*Not in possible path of traffic*)☐ None ☐ < 4 ft. ☐ ≥ 4 ft. ☐ N/A14. Is there a marked bicycle lane marked with a line or a raised curb?☐ Yes ☐ No

15. Are there any signs indicating bicycle use (share the road, etc.)?

☐ Yes ☐ No

16. Are there any signs or structures discouraging skateboard usage?

☐ Yes ☐ No

17. Is there an informal path (shortcut), not on a cul-de-sac, which connects to something else?

☐ Yes ☐ No

18a. Is this a dead-end street?

☐ Yes ☐ No

18b. Is there a paved or informal path at the end of the cul-de-sac or dead end street that connects to something else?

☐ Yes ☐ No ☐ N/A

Entry 2: ID# _____ Date: _____

19. Estimate the proportion of street segment that has ground floor or street-level windows within 40 feet of sidewalk/walkway (or street if no sidewalk/walkway)

☐ 1-25% ☐ 26-50% ☐ No windows
☐ 51-75% ☐ 76-100%20. How many different predominant building façade colors exist on the street segment? (*Count both sides of the street*)☐ 1 ☐ 2-3 ☐ 4-6 ☐ >6 ☐ N/A21. How many different building accent colors exist on the street segment? (*Count both sides of the street*)☐ 1 ☐ 2-3 ☐ 4-6 ☐ >6 ☐ N/A22. How many different predominant building materials (e.g., brick, concrete, steel, wood) exist along the street segment? (*Count both sides of the street*)☐ 1 ☐ 2-3 ☐ 4-6 ☐ >6 ☐ N/A

23. How many trees exist within 5 feet of either side of the sidewalk/pathway (can be in buffer or setback; also count trees that are more than 5 feet away if they provide shade for the sidewalk/pathway)?

☐ 0 or 1 ☐ 2-5 ☐ 6-10 ☐ 11-20 ☐ 21+ ☐ N/A

24. How are the trees generally spaced?

☐ Evenly spaced ☐ Irregularly spaced ☐ N/A

25. What percentage of the length of the sidewalk/walkway is covered by trees, awnings or other overhead coverage?

☐ 1-25% ☐ 25-50% ☐ No coverage
☐ 51-75% ☐ 76-100% ☐ N/A

26. What is the smallest building setback from the sidewalk?

☐ No building ☐ <10 feet ☐ 10-20 feet
☐ 21-50 feet ☐ 51-100 feet ☐ >100 feet

27. What is the largest building setback from the sidewalk/walkway?

☐ No building ☐ <10 feet ☐ 10-20 feet
☐ 21-50 feet ☐ 51-100 feet ☐ >100 feet28. What is the average height of buildings? (*Count both sides of the street*)☐ No building ☐ 1-2 stories ☐ 3-5 stories
☐ 6-10 stories ☐ >10 stories

Crossings

Crossing ID# _____

Auditor ID# _____

Intersection of _____ &

Crossing from N S E W to N S E W

1. Intersection control

Check all that apply

- ☐ Yield signs
- ☐ Stop signs
- ☐ Traffic signal
- ☐ Traffic circle
- ☐ N/A – Unanticipated mid-segment crossing
- ☐ None of the Above

2. Number of legs at intersection

Check one

- ☐ T-intersection
- ☐ 4-way intersection
- ☐ > 4-ways
- ☐ N/A

3. Signalization

Check all that apply

- ☐ Green arrows for dedicated vehicle turn
- ☐ Pedestrian walk signals
- ☐ Push buttons
- ☐ Countdown signal
- ☐ Audible walk signal
- ☐ None of the Above

4. Crosswalk timing: _____ seconds

(Length includes white “walk” time + flashing red “don’t walk” time)

- ☐ No crosswalk
- ☐ No signal

5. (a) Pre-crossing curb (Even if there is no marked crosswalk, there is still a crossing)

Check one

- ☐ Ramp lines up with crossing
- ☐ Ramp does not line up with crossing
- ☐ No ramp

(b) Post-crossing curb

Check one

- ☐ Ramp lines up with crossing
- ☐ Ramp does not line up with crossing
- ☐ No ramp

6. Gutters present in crossing

Within possible path of crossing pedestrians

- ☐ Yes
- ☐ No

7. Other characteristics of crossing

Check all that apply

- ☐ Steep slope or steep cross-slope at intersection
- ☐ Temporary obstructions
- ☐ Crossing aids (e.g., flags)
- ☐ None of the Above

8. Crosswalk treatment

Check all that apply

- ☐ Marked crosswalk
- ☐ High-visibility striping
- ☐ Stop lines on road or additional crosswalk warnings
- ☐ Raised crosswalk
- ☐ Different material than road
- ☐ None of the Above

9. Bike lane crosses the crossing?

- ☐ Yes
- ☐ No

10. Distance of crossing leg, including all potential parking and turn lanes

_____ lanes wide

11. Features

Check all that apply

- ☐ Specifically identified lanes **turning into crossing**
 - ☐ Right turn
 - ☐ Left turn
- ☐ Protected refuge islands
- ☐ One-way streets **through crossing**
- ☐ Curb extension
- ☐ None of the Above

12. Miscellaneous problems

Check all that apply

- ☐ Lack of lampposts or overhead street lamps
- ☐ Poor condition of crossing surface
- ☐ Poor visibility at corners
- ☐ Faded or worn crosswalk markings
- ☐ Unanticipated mid-segment crossing
- Reason: _____
- ☐ Other: _____
- ☐ None of the Above

Cul-de-sac

Culdesac ID# _____

Auditor ID# _____

Street name _____

In order for the cul-de-sac or street dead-end to be rated, it must be within 400 feet of the participants' home and will usually (but not always) be the dead-end part of the participants' street. The participant's home is considered to be at the mid-point along the sidewalk or pathway in front of the home (house or apartment building). The cul-de-sac opening is the point at which the street widens or bulbs out. The street dead-end opening is 50 feet from the end of the street or to the first driveway, whichever is furthest.

1. How close is the cul-de-sac or dead-end to the participants' home?
Check one
 - ☐ On the cul-de-sac
 - ☐ Adjacent to the cul-de-sac (one or two homes/houses removed from cul-de-sac opening)
 - ☐ Non-adjacent, but less than 200 feet away
 - ☐ More than 200 feet away
2. How big is the cul-de-sac or dead-end at its largest diameter?
Check one
 - ☐ ≤ 50 feet
 - ☐ 51 – 100 feet
 - ☐ 101 – 200 feet
 - ☐ > 200 feet
3. What is the incline/grade of the:
Cul-de-sac or dead-end at its steepest point:
_____ degrees
Street at the opening to the cul-de-sac or dead-end:
_____ degrees

4. What percentage of the cul-de-sac or dead-end is paved?
Check one
 - ☐ <25%
 - ☐ 25-50%
 - ☐ 51-75%
 - ☐ > 75%
5. For the paved part of the cul-de-sac or dead-end, how smooth is the pavement?
Check one
 - ☐ Not smooth at all – a lot of bumps or cracks
 - ☐ Somewhat smooth – a few major bumps or cracks
 - ☐ Mostly smooth – minor bumps or cracks
 - ☐ Very smooth – few or no bumps or cracks
6. What amenities exist at the opening to or along the cul-de-sac or dead-end portion of the street?
Check all that apply
 - ☐ Basketball hoops _____ number
 - ☐ Skateboard features (e.g., ramps) _____ number
 - ☐ Streetlights _____ number
 - ☐ Pedestrian or other safety signage (e.g., children at play)
 - ☐ Other; describe _____
 - ☐ None of the Above
7. Can most of the cul-de-sac or dead-end area be seen from the participant's home (using the most optimal viewpoint from the home, including higher story windows)?
☐ Yes ☐ No
8. Can most of the cul-de-sac or dead-end area be seen from other homes (using the most optimal viewpoint from the home, including higher story windows)?
☐ Yes ☐ No

9. _____ driveways enter into the cul-de-sac or dead-end area?
10. Is there an island in the cul-de-sac or dead-end area?
☐ Yes ☐ No
11. Is parking allowed (not prohibited) in the area?
☐ Yes ☐ No
- 12 (a). Is there access through the end of the cul-de-sac or dead-end street to another public street or area?
☐ Yes ☐ No If no, done with section.
- 12 (b). If yes, what type of access?
Check all that apply
 - ☐ Formal: A planned formal path with a paved, marked or deliberate surface.
 - ☐ Informal: An informal path that is unpaved, not marked and could be considered a shortcut.
 - ☐ Informal, no path
- 12 (c). If yes, what is on the other side?
Check all that apply
 - ☐ Another street
 - ☐ A recreation or play area (can be part of a school)
 - ☐ Open space
 - ☐ Commercial or retail area
 - ☐ Other _____



Microscale Audit of Pedestrian Streetscapes (MAPS)

Training Manual & Picture Guide

Developed by: Carrie Geremia
Kelli Cain
Lindsay Amberg
Blair Cuny
(NIK, TEAN and SNQLS studies)

Revised November 14, 2012

**Tool and protocol developed by: James Sallis, Lawrence Frank, Brian Saelens, Kelli Cain,
Terry Conway, Jim Chapman, Carrie Geremia, Abby King**

**San Diego State University
Urban Design 4 Health
Children's Hospital Seattle
Stanford University Medical Center**

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I. Field Procedures

a. Defining Participant Route

A **participant route** is approximately .25 mile route from the participant's home towards the nearest pre-determined destination. It begins on the neighborhood street nearest to a participant's home. In an apartment or condo complex, the rater will begin at the entrance to the complex on the main street. It is a route-level survey conducted for the entire route. The rater conducts the survey of the neighborhood environment by rating the neighborhood between the participant's home and the pre-designated ending destination. He/ she is not required to enter the grounds to locate the participant apartment/ condo unless necessary to identify the main entrance for the grounds. He/she also needs to complete a segment survey for each segment within the route and a crossing survey for each crossing within the route. The number of segments and crossings per route will vary.

A participant route will almost always start with a segment at the participant's house. When there is no sidewalk on the participant's side of the street, but there is one on the other side of the street, the route will start with a crossing. It is recommended that the rater complete the segments, crossings, and cul-de-sacs sections of the tool on his/her way to the ending location and then on the way back to the participant's house conduct the survey for the route section of the tool. It is necessary to walk on the same side of the street as for the segment(s) because there's a chance you may see something on the way back that you didn't catch the first time.

Street Segments

Each route is made up of one or more segments. A **segment** is a section of street or road between two crossings or if the name of a street changes a new segment should begin although a crossing has not been made.

Crossings

A **crossing** occurs when the rater must go through an intersection, whether a pedestrian crossing exists or not. Crossings are located between two segments. However, a driveway along a segment cannot be considered as a crossing. Many streets may not have any crossings (e.g., long suburban road).

Cul-de-sac

A **cul-de-sac** or street dead-end must be within 400 feet of the participants' home and will usually (but not always) be the dead-end part of the participants' street.

b. Commercial Cluster Route (for TEAN only)

A **commercial cluster route** consists of the road or street in front of a pre-determined cluster of commercial locations. The street address for one location within the cluster will

be communicated to the rater. . He/she will then travel to the designated location and begin the rating the nearest street or road (as long as it also serves as the main entryway into the commercial property).

- If there is no entrance, the rater will identify the street or road that contains the entrance.
- If there is more than one entrance, the rater will select the most prominent (main entrance).
- If this is not obvious, the rater will select the one that is nearest to the identified location.

For each cluster, a route survey will be completed for the identified street/road that contains the entrance. This route will consist of one segment and two crossings on either end of the segment which will be completed in a straight line.

c. Shared Segments and Crossings

Segments and crossings may be shared across multiple participant routes (e.g., neighbors one block apart may share most of the route). To prevent multiple ratings of the same segment or crossing, raters can fill in the heading information on a blank tool (i.e. streets, type, & side). The rest of the page can be left blank and used as a place holder. This should only be done for exact matches, so raters will need to verify that they are rating segments on the same side of the street and crossings which cross in the same direction. The Route section will never be shared.

d. Rules for Side of Street Selection

1. Begin data collection on the same side of the street as the participant's point of origin.
2. If you encounter a segment on the walking route with no sidewalk, cross to the opposite side of the street only if a sidewalk exists. If before you begin the segment you can see up ahead that the sidewalk on your side of the street is non-continuous and there is a sidewalk on the other side of the street, you will complete a crossing and start a segment on the other side of the street.
3. If permanent or temporary obstructions in the pathway exist that forces you off the walkway, cross to the other side of the street.
4. Do not cross to the opposite side of the street more than twice in a one quarter mile route.

e. In the Field

Requirements:

- Binder with protocol and procedures
- Prepared route maps with participant addresses and drawn routes
- Participant Route folders
- Extra copies of observation surveys
- GPS, Thomas Guide/area map, or directions
- Slope Measure-Inclinometer
- Stopwatch
- Camera
- Comfortable clothes & shoes
- Water bottle and snacks
- Cell phone
- Sun/rain protection, hat, umbrella & basic first aid kit

f. Personal Safety

- Check weather conditions prior to beginning audit and prepare accordingly.
- Conduct during daylight hours.
- If raters feel threatened in any way, they should leave the area immediately and/or call police.

g. Expectations

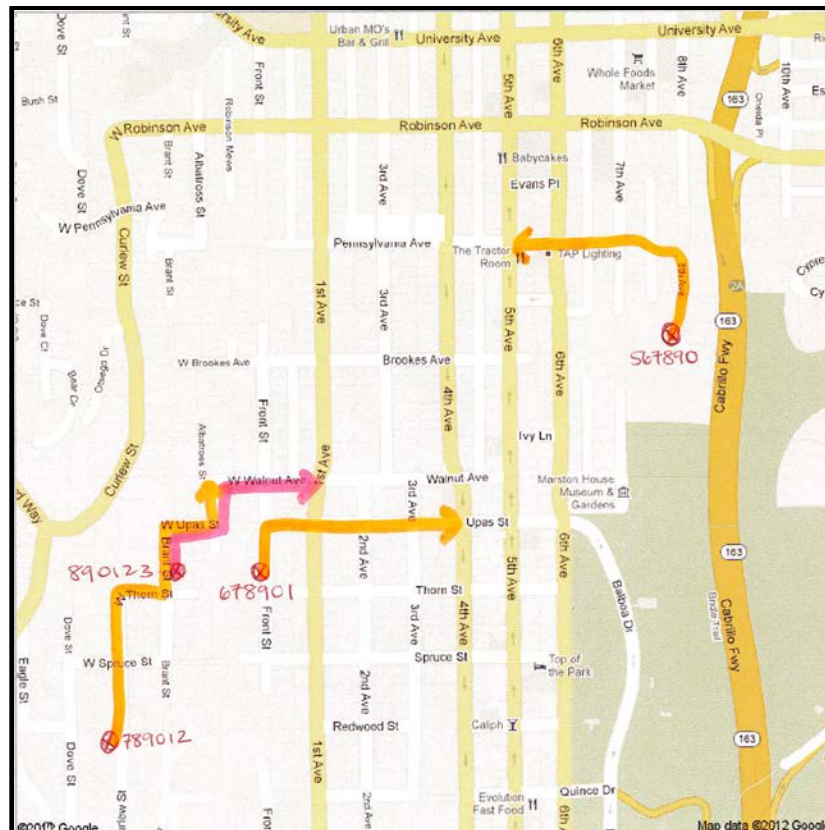
- It is expected that each route will take approximately 30 minutes to complete. TEAN Commercial clusters should only take 10-15 minutes.
- Raters need to complete every route that they start, so they should pay attention to how much time is left before the end of their shift. If there isn't enough time to complete a participant route, don't start rating it.
- After completing, but before leaving a route, the rater should scroll through the tool again and be sure to fill in any blank fields before leaving the location.
- Rater should complete the tools in pen and make sure to write legibly.
- If a rater cannot find a place, gets lost, has questions on the end-point etc. they should call the office.
- Raters will also need to meet with the evaluator each shift to check in about the tools last completed. They should count on spending about 30 minutes debriefing.
- A weekly meeting is mandatory to discuss the week's issues and questions that have come up as a group. The meeting minutes from the previous week will be read/ discussed as a refresher and then each agenda item will be discussed. Post-meeting, the protocol will be updated, as necessary, and any decisions will be added to a comprehensive decisions document.
- Raters should turn in all tools and maps after each shift in the field whether they have been completed or not.

h. Maps

The maps will come with a table that will already have the Route ID, starting address and ending address filled in. It is up to the rater to complete:

- The number of segments, crossings, and cul-de-sacs on each route.
- “Y” for yes or “N” for no under the shared column depending if there were shared segments, crossings, or cul-de-sacs on the route.

Route ID	Starting Address	Ending	Shared	Segs	Xings	CdS	Rte
567890	1780 8 th Ave	Pennsylvania Ave & 5 th Ave	N/A				
678901	2021 Front St	Upas St & 4 th Ave	N/A				
890123	2024 Brant St	W Walnut Ave & 1 st Ave					
789012	2312 Curlew St	Albatross St & W Walnut Ave					



II. Survey protocol and picture guide

MAPS Survey

Level 1: Route

When auditing the route portion of the microscale tool, count both sides of the street on the walking route.

- Items on the diagonal side of an intersection should not be counted in the route section.
 - Exceptions: Streetscape
 - 1-2) Bus Stops: If a bus stop exists on both sides of the street, and the stops service the same exact routes, only count 1 bus stop.
 - 6) Driveways: Only count driveways that would be crossed by a pedestrian on the walking route.

There are 3 sections to the Route portion of the tool: Destinations & Land Use, Streetscape, and Aesthetics and Social. You do not need to complete these in an order; you will likely be tallying, making notes, and marking down items as you come across them.

a. Destinations and Land Use

1. Method of Data Collection

How is audit information collected?

- ☐ Foot (walked route)
- ☐ Auto (drove route)
- ☐ Both (walked & drove route)

Be sure to rate both sides of the street for Destinations & Land Use Section

Raters should complete survey by foot whenever possible

2. Parking

What parking facilities are present? (*Check all that apply*)

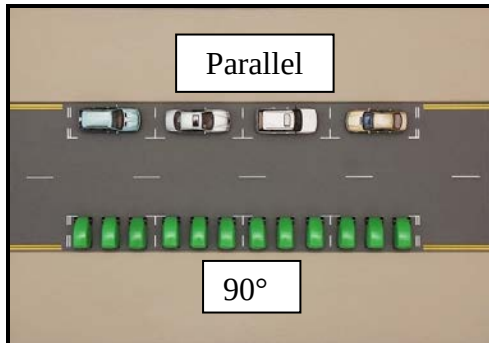
- ☐ None
- ☐ On-street, parallel or angled parking
- ☐ Small lot or garage (< 30 spaces)
- ☐ Medium to large lot or garage

Many variations of designated parking areas may be found such as “street” parking, parking structures, surface lots, metered parking, free parking, and pay lots.

- a. On-street parking:** Vehicular parking that is accessed directly from travel lanes and shares the same surface area, unlike off-street parking, where vehicles must use a driveway that connects travel lanes and dedicated parking areas.

- b. **Parallel parking:** Parallel to curb means the vehicle parks on the street facing the same direction that traffic flows.
- c. **On-street 90 degree:** Vehicles must turn into the parking slip at a right angle.
- d. **Angled Parking:** Vehicles parked in spaces at a 30 or 45 degree angle relative to the direction of travel lanes.

Parallel and 90 degree parking



Angled Parking



- e. **Parking garages:** Enclosed structures designed for vehicular parking. They can be single or multi-storied structures. They may have simple and unassuming facades or decorative ones. A small lot has less than 30 spaces, while medium or large lots have more than 30 spaces.

Small Lot <30 spaces



Large lot >30 spaces



3. Residential Uses

What types of residential uses? *(Check all that apply)*

- ☐ Single family houses
- ☐ Multi-unit homes (duplex, 4-plex, row house)
- ☐ Apartments or condominiums
- ☐ Apartments above street retail
- ☐ Retirement/senior living facility
- ☐ Other (mobile home, dormitory)
- ☐ None

- a. **Single-family homes:** A structure designed to house only a single family.

Single-family home



- b. **Multi-unit homes:** Built for more than one family (duplexes, town homes, or row houses).

- i. **Row Houses:** One of a series of houses, often of similar or identical design, situated side by side and joined by common walls.

Multi-unit home

Row Houses



- ii. **Duplex:** Duplexes typically have different front doors for each unit and different main addresses.

Duplex



- c. **Apartments:** A room or suite of rooms designed as a residence and generally located in a building occupied by more than one household. Apartments typically have one main entrance, one main address with apartment numbers.

Apartment



Condominium



- d. **Apartments above street retail:** Apartments located above the street on top of commercial retail destinations.
- e. **Retirement/Senior living facility:** A private multi-residence a housing facility that provides living quarters and care for the elderly.

Apartments above Street Retail



Retirement/Senior Living Facility



f. Other:

- i). Mobile Homes:** Prefabricated homes built in factories, then installed at the home site.
- ii). Dormitory:** A college or university building containing living quarters for students.

Mobile Home



Dormitory



4. Non-residential buildings

How many of the non-residential buildings are adjacent to the pedestrian walkway or sidewalk and/or street? (*Adjacent to sidewalk and street means that there is not a yard, parking lot or other space blocking entrances between the sidewalk and the building*)

- | | |
|---------------------------------|---|
| ☐ 0% | ☐ 100% |
| ☐ 1-33% | ☐ N/A (all residential buildings) |
| ☐ 34-66% | ☐ N/A (no pedestrian walkway/sidewalk) |
| ☐ 67-99% | |

- 5. How many of the non-residential buildings have parking lots or drives between the pedestrian walkway or sidewalk along the street and their entrances?**

- | | |
|---------------------------------|---|
| ☐ 0% | ☐ 100% |
| ☐ 1-33% | ☐ N/A (all residential buildings) |
| ☐ 34-66% | ☐ N/A (no pedestrian walkway/sidewalk) |
| ☐ 67-99% | |

If there is anything other than zero marked in Land Use 6a-x these questions cannot be N/A (all residential buildings)

Adjacent to sidewalk



Drive between walkway & buildings



Neither – yard between walkway and entrance



- In most instances, questions 4 and 5 will equal 100%.
- However, sometimes non-residential buildings may have non-parking areas in the setback such as gardens, yards, open space, etc.)

6. Non-Residential Uses

Land uses and elements should only be counted if they are along the route walked. ***Do not count land uses and elements beyond the route even if they can be seen from the route.***

Some establishments may serve 2 purposes (i.e., a convenience store and deli). In that case, select the predominant use of the establishment based on size (e.g., if there is a small café within a large market, indicate it is as a market). If they are separate businesses that just share a wall, they can be counted separately.

How many of the following types of non-residential destinations are present?

Reminder:

- Only count those land uses with entrances along your route.
- Do not double count the non-residential destinations

a. Food-related land uses

i). Fast food restaurant (national or local chain, primarily sells burgers, fried chicken, pizza, or “Americanized” Mexican, Chinese, etc.)

☐ 0 ☐ 1 ☐ 2+



ii). Sit-down restaurant

☐ 0 ☐ 1 ☐ 2+



iii). Grocery/supermarket

☐ 0 ☐ 1 ☐ 2



iv). Convenience store (may also be a gas station)

☐ 0 ☐ 1 ☐ 2+



v). Café or coffee shop

☐ 0 ☐ 1 ☐ 2+



vi). Liquor/alcohol store (primarily sells alcohol, wine bar, strip club)

☐ 0 ☐ 1 ☐ 2+



Anything with “liquor” or “alcohol” in the name should be counted

vii). Big box store (e.g., Home Depot, Best Buy, Sears, Super Walmart, Target)

☐ 0 ☐ 1 ☐ 2+



Big Box Store (e.g., Target, Wal-Mart): Large retail stores whose physical layout resembles a large square or box when seen from above. A big-box store is characterized by a large amount of floor space (generally more than 50,000 square feet), a wide array of items available for sale, and is generally located in suburban areas.

viii). Specialty Food Store (e.g., ice cream, candy, bakery)

☐ 0 ☐ 1 ☐ 2+



b. Retail and service oriented land uses

ix). Pharmacy or drug store

☐ 0 ☐ 1 ☐ 2+



x). Bank or credit union

☐ 0 ☐ 1 ☐ 2+



xi). Health-related professional (e.g., chiropractor, Dr. office)

☐ 0 ☐ 1 ☐ 2+



xii). Entertainment (e.g., movie theatre, arcade)

☐ 0 ☐ 1 ☐ 2+



xiii). Other service (e.g., salon, lawyer, accountant, realtor, laundry/dry cleaner, commercial mailing service)

☐ 0 ☐ 1 ☐ 2+



Other examples

- Child care center out of someone's home
- UPS store
- Tanning salon
- Traffic School

xiv). Other retail (e.g., books, clothing, hardware, video rental)

☐ 0 ☐ 1 ☐ 2+



c. Government or community land use

xv). Health or social services (e.g., hospital, health department, community action agency, police/fire stations, city hall, etc.)

☐ 0 ☐ 1 ☐ 2+



xvi). Library/Museums

☐ 0 ☐ 1 ☐ 2+



xvii). Post office

☐ 0 ☐ 1 ☐ 2+



xviii). Senior center

☐ 0 ☐ 1 ☐ 2+



xix). Place of worship (e.g., church, synagogue, convent, mosque, cemetery, etc.)

☐ 0 ☐ 1 ☐ 2+



xx). School

☐ 0 ☐ 1 ☐ 2+



COUNT

- Any place that has school in the name (e.g. preschool)
- Church schools
- Learning Centers

d. Other land use

xxi). Warehouse/factory/industrial

☐ 0 ☐ 1 ☐ 2+



xxii). Abandoned building

☐ 0 ☐ 1 ☐ 2+



- Foreclosures are not counted as abandoned buildings
- If there is any signage/lock box/vested interest in the building, it is not abandoned.

xxiii). *Unmaintained lot/field*

☐ 0 ☐ 1 ☐ 2+



xxiv). *Casino*

☐ 0 ☐ 1 ☐ 2+



e. Recreational land use

xxv). *Community garden*

☐ 0 ☐ 1 ☐ 2+



xxvi). Private indoor (e.g., commercial gyms, dance clubs)

☐ 0 ☐ 1 ☐ 2+



xxvii). Public indoor (community centers)

☐ 0 ☐ 1 ☐ 2+



xxviii). Private outdoor (e.g., private golf course, commercial outdoor recreation, play structures on church property)

☐ 0 ☐ 1 ☐ 2+



Private indoor & Private outdoor

Boys & Girls Club with both inside and outside features will be counted under both

xxix). Public outdoor pay (e.g., pool)

☐ 0 ☐ 1 ☐ 2+



xxx). Public park (Dog park, Equestrian trails)

☐ 0 ☐ 1 ☐ 2+



7. Shopping Centers

Check all that apply

- ☐ Shopping Mall
- ☐ Strip Mall
- ☐ Shopping Arcade
- ☐ None of the above



Shopping Mall: A building or set of buildings which contain retail units, with interconnecting walkways enabling visitors to easily walk from unit to unit



Strip Mall: An open area shopping center where the stores are arranged in a row, with a sidewalk in front. Typically developed as a unit and have large parking lots in front. They face major traffic arterials and tend to be self-contained with few pedestrian connections to surrounding neighborhoods.



Shopping Arcade: A shopping arcade is a row of commercial shops that are easily accessible from the sidewalk or walkway and where **only** pedestrian traffic is accessible. The area can be covered or not and can be inside.

B. Streetscape

Be sure to rate both sides of the street for Streetscape Section

Public Transit Stops

1. Number of public transit stops (*If NO stops, skip to 3*)

(a) Bus stops _____

(b) Senior transit/paratransit _____

Write in the number of stops on the line

2. What is available at each transit stop? (*Only count benches that users could be easily identified by bus drivers as waiting to ride the bus*)

Route # _____

☐ Bench ☐ Covered Shelter ☐ Timetable

Route # _____

☐ Bench ☐ Covered Shelter ☐ Timetable

Route # _____

☐ Bench ☐ Covered Shelter ☐ Timetable

Route # _____

☐ Bench ☐ Covered Shelter ☐ Timetable

Route #: If the stop does not have its own individual number, list the routes that the stop serves.

- If there are 2 bus stops on either side of the street serving the same route, count it as 1 bus stop
- Combine the 2 stops in your ratings. For example, if one of them has a timetable and other has a shelter, mark both.

Bus Stop



Senior Transit/Para transit



Bench



Covered Shelter



Timetable



Speed Limit

3. Is there a posted speed limit along the route? (*If multiple, select the highest*)

Regular

☐ Yes _____ mph ☐ No

Special zone (*school, construction*)

☐ Yes _____ mph ☐ No

Special Zones - School Construction



Residential



4. Street Characteristics

What other street characteristics are present? (Specify # of each type)

Check all that apply

- ☐ Traffic calming (signs, circles, speed tables, speed humps, curb extension) _____
- ☐ Roll-over curbs _____ (if whole segment or both sides = 1)
- ☐ Drainage ditches _____ (count one side of street)
- ☐ Instructional signs for pedestrian's _____
- ☐ Crosswalk signage or other pedestrian signage (for drivers) _____
- ☐ None of the Above

Traffic Calming Sign Speed Hump = 2 for traffic calming



Traffic Circle



Curb Extension



Speed Table



a. Traffic Calming:

Infrastructure with the purpose of reducing vehicle speeds and improving safety for drivers and pedestrians (e.g., traffic calming signs, traffic circles, speed tables, speed humps, curb extensions). Designed measures compel drivers to slow down, or act to exclude or divert traffic altogether.

- Count each traffic calming indication separately
Example: A speed bump accompanied by a sign indicating the bump would count as 2
- Dip in the road accompanied by a sign to alert drivers should be counted
- Dip in the road without a sign should not be counted
- A guardrail *does not* count as traffic calming

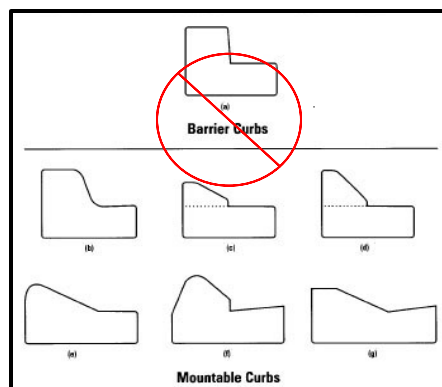
b. Traffic circles:

Designed to slow traffic speed through an intersection. They are elements placed in the center of an intersection, which diverts traffic around the center of the intersection.

c. Roll over Curbs:

Allow cars to drive up onto the sidewalk. It is not a 90 degree angled curb

- When counting roll-over curbs, count one for the whole segment
- Only count one side of the segment, if roll over curbs are on both sides
- If the majority of the segment has a roll over curb, count as 1



d. Drainage ditches: Only count the side of the street you're walking on.



e. Instructional signs

Instructional signage for pedestrians: Identify to the pedestrian where to walk or cross the street.



f. Crosswalk signage or other pedestrian signage (for drivers): Alerts drivers where pedestrians may be crossing.

Pedestrian Safety Signs



Pedestrian Crosswalk Sign



6. Street lights

Are street lights installed?

- ☐ None
- ☐ Some (e.g., overhead street lights on utility poles with wide spacing)
- ☐ Ample (e.g., regularly spaced pedestrian lampposts)

Select highest concentration of lighting available on route, even if it is not the majority

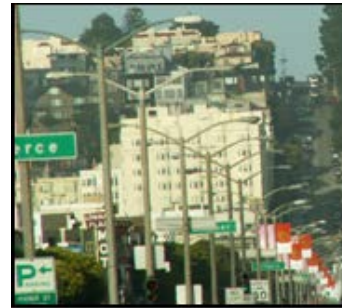
No Lights



Some



Ample



7. Driveways or alleys

How many driveways or alleys are there? Count only segment side of the street.
(Count only alleys that are wide enough to be used by cars or other vehicles that could impede pedestrian traffic.)

- ☐ None ☐ 1-2 ☐ 3-5 ☐ 6+

8. Street amenities

Presence of street amenities

Check all that apply

- ☐ Building overhangs that provide shelter from inclement weather in public space (i.e. sidewalks)
- ☐ Trash bins (public)
- ☐ Benches or other places to sit
- ☐ Bicycle racks
- ☐ Working drinking fountain
- ☐ Working public telephones
- ☐ Kiosks or information booths
- ☐ None of the Above

Building overhang



Trash bin



- i). **Trash bins:** Must be for public (or pedestrian) use, not private residences' trash bins
- ii). **Benches or other places to sit:** Tables or benches outside of restaurants/cafés do not count as a street amenity (places to sit). These need to be public seating areas.

- Only count benches in separate public seating.
- Do not double-rate bus stop benches they will be counted under the previous section on public transit stops.

Benches



Bike Racks



Working drinking fountain



Working public telephones



Kiosk or information booths



9. **Mid-segment Street Crossing**

Presence of any mid-segment street crossing, where an individual could safely cross (marked by sign or crosswalk)?

☐ Yes ☐ No

This does not have to be a place where you are crossing, this just needs to be along your route to be counted.



C. *Aesthetics and Social*

1. Pleasant Hardscape features

Do you observe pleasant hardscape features, such as fountains, sculptures, or art (public or private)?

☐ Yes ☐ No

Private fountain



Public art



Public sculpture

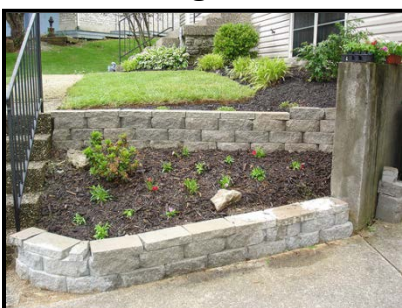


2. Pleasant Softscape features

Do you observe softscape features such as gardens or landscaping (e.g., *Public: bodies of water, designated viewpoints; Private: retaining walls, bark, ponds*)?

☐ Yes ☐ No

Retaining wall



Community garden



3. Historic and Cultural Features

Are there observable historic or cultural features along the route (*not further than one street segment away from route and can be seen from the route*)?

☐ Yes ☐ No

Historical/cultural features need to be on public property, not private residences.

Seattle's historic Pioneer Square

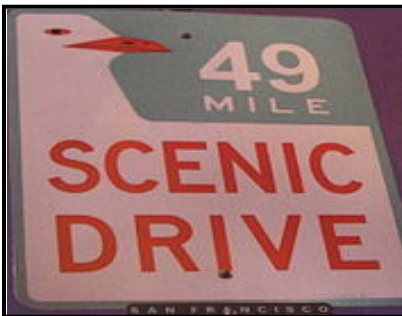


Scenic Drive Sign

Cultural feature in Seattle



Hillcrest Neighborhood sign in San Diego



Street flags attached to lamp posts can also count as a historical or cultural feature if it is pointing out something specifically unique to that area.

4. Building maintenance

Are the buildings well maintained?

☐ 0% ☐ 1-49% ☐ 50-99% ☐ 100%

Buildings do not need to be brand new to get a 100% rating.
They just need to be well kept and maintained

0%



50-99%



100%



5. Landscaping maintenance

Is landscaping well maintained?

☐ 0% ☐ 1-49% ☐ 50-99% ☐ 100%

0 %



100 %



6. Presence of Physical Disorder

Which of the following physical disorders are present?

Check all that apply

- ☐ Graffiti/tagging (not murals)
- ☐ Abandoned cars
- ☐ Buildings with broken/boarded windows
- ☐ Drug paraphernalia
- ☐ Broken glass
- ☐ Beer/liquor bottles/cans
- ☐ Litter in yards
- ☐ Noticeable/excessive litter in street/sidewalk
- ☐ Neighborhood watch signs
- ☐ Signage for commercial destinations or parks
- ☐ None of these

Graffiti/Tagging



Abandoned car



Boarded Windows



Drug Paraphernalia



Broken Glass



Beer cans/bottles



Litter in yards



Excessive Litter



Neighborhood Watch Sign



Signage for commercial destinations or parks



7. **Physical Disorder**

Rate the extent of physical disorder (*question 6*)
(*e.g., litter, graffiti, broken glass, abandoned cars*)

- ☐ None
- ☐ A little (physical/social disorder is present)
- ☐ Some (disorder is very noticeable)
- ☐ A lot (disorder is overwhelming)

If anything in question 6 is marked, besides signage, question 7 cannot be “none”. If there are only neighborhood watch signs or signage for commercial destinations or parks, question 7 can be marked as “none”.

8. **Social Disorder**

Rate the extent of social disorder (*e.g., stray dogs, gangs, prostitution, hostile behaviors, drug dealing, panhandlers, etc.*)

- ☐ None
- ☐ A little (physical/social disorder is present)
- ☐ Some (disorder is very noticeable)
- ☐ A lot (disorder is overwhelming)

Excessive rats/insects will be
rated here

7. **Obstructions to walking**

Other obstructions to walking

Check all that apply

- ☐ Railroad tracks (must obstruct walkway)
- ☐ Highway nearby (within one segment from walkway)
- ☐ Other: _____
- ☐ None

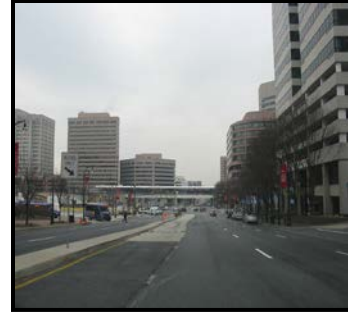
a. **Railroad tracks:** To count railroad tracks you must actually walk over the tracks.

b. **Highway:** Street has speed limit of 45mph or higher, or is 5 or more lanes wide. As long as the highway is within one segment from the route, it can be counted here. It doesn't necessarily have to be “obstructing” your walkway. Walking over the highway would count.

Railroad tracks



Highway



8. Presence of walkers

Is there presence of anyone walking?

☐ Yes ☐ No



Bikers do not count for this question!

Level 2: Segment

Segment: A section of street or road between two crossings. If the name of the street changes, that segment should end and new segment should begin, although a crossing has not been made.

When auditing the walkways/sidewalks portion of the microscale tool only those items on the immediate side of the walking route should be counted.

Exception: Questions 20-22, and 28 both sides of the street will be counted.



Housing Complex (Condo complex, apartment complex, etc)

Start route at the main street entrance to the complex.
Do not rate within the housing complex



Gated communities

Begin route from participants house i.e. from inside through a pedestrian gate (or without hopping fences or breaking the law).
If not, start your route outside of the gate. Call the office to determine if you'll need to extend your route beyond what is indicated on the map.



Private road

If a rater comes across a private road that is part of their route, the route taken will need to be re-configured. Call the office to find out which way to go!

The participant's home is considered to be at the mid-point along the sidewalk or pathway in front of the home (house or apartment building).

Shared	• On each piece of the tool you should also circle either "Y" for yes (shared) or "N" for no (not shared) in the top right corner. • If it is shared you will also write in the route ID number that piece is shared with
Segment ID #	• The data manager will fill this in, as a rater, leave blank
Auditor ID #	• This is the rater ID number, which is unique to each rater.
Residential vs Commercial	• Is the segment predominantly full of residential housing or commercial buildings?
Street	• The street name you begin walking on. • For all street names be sure to write Ave, St, Rd, etc. following the name
Starting Cross-Street	• If starting mid-segment or from a participant's house, use the address of the building. If starting the segment from an intersection, use the cross-street

A. Walkways/Sidewalks

Side of Street

Mark the side of the street using your map, not the direction you are walking.
Example: If your segment starts going South, but curves around so you end up going East, you can put South (where you started the segment) for side of street

1. Sidewalk/Walk

Is a sidewalk present?

☐ Yes ☐ No

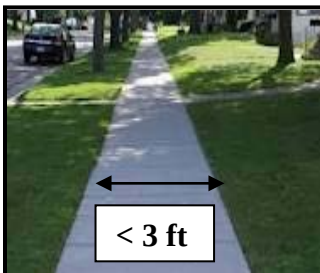
- A sidewalk need not be nicely paved walking path, as long as it is paved, asphalt or concrete; it will count as a sidewalk
- Count all sidewalks along a segment whether they are short or long
- If no sidewalk present, check “no sidewalk” for questions 2, 4-9, question 3a = No, and 3b = N/A

2. Sidewalk width

What is the width of the majority of the sidewalk?

☐ < 3 ft. ☐ 3-5 ft. ☐ > 5 ft. ☐ No sidewalk

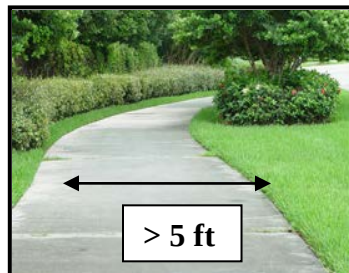
<3 ft.



3-5 ft.



>5 ft.

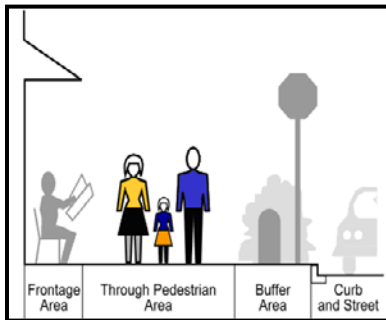


3. Buffers

a. Is there a buffer present?

☐ Yes ☐ No

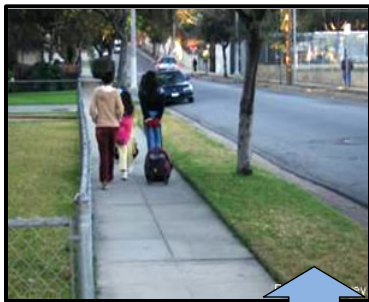
Buffer



No Buffer



Grass Buffer



Tree Buffer



Shrub Buffer



Buffer: Separates vehicular and pedestrian zones parallel to the edge of paved roads. They often occupy space between traffic lanes and walking paths that is not intended for either vehicle traffic or walkers. Any buffer on a segment, no matter how long, will be counted.

- Tree plantings, telephone poles or parking meters should not be considered as a buffer if there is, on average, more than 20 feet between them along the street segment.
- A bike lane does not count as a buffer.
- Brick alone next to a sidewalk would not be counted as a buffer because it is not inhibiting cars from coming onto the sidewalk.

b. How wide is the majority of the buffer?

- ☐ < 3 ft. ☐ 3-5 ft. ☐ > 5 ft. ☐ N/A

Buffer width: This is measured by calculating the distance the buffer covers from the curb or edge of street segment to the primary walking surface. Variations in buffer width along a single street segment are common, so record the **most typical buffer width**.

- If Question 1 (sidewalk presence) is checked "No", check Question 3a as "No" and Question 3b as N/A.
- Question 12 will pick up the buffer if there is one.

4. Continuous vs. non-continuous sidewalk

Is the sidewalk continuous within the segment?

☐ Yes ☐ No ☐ No sidewalk

- a. **Non-continuous sidewalk:** A sidewalk that stops mid-segment or is interrupted (i.e. by an alley).

Continuous



Non-continuous



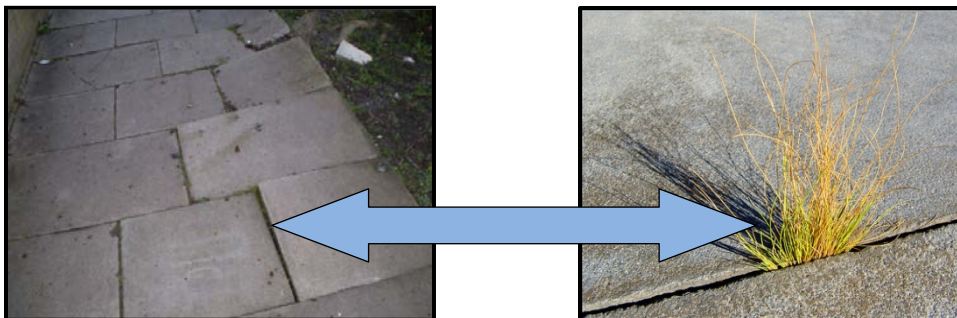
5. Trip Hazards

Trip Hazard: An increased likelihood of tripping due to a raising or lowering in the walkway. A hazard could be due to plants, tree roots, or general erosion.

Are there poorly maintained sections of the sidewalk that constitute trip hazards? (e.g., heaves, misalignment, cracks, overgrowth)

a. **Minor - moderate**

☐ None ☐ One ☐ A few ☐ A lot ☐ No sidewalk



b. **Major**

☐ None ☐ One ☐ A few ☐ A lot ☐ No sidewalk

One



Few



A lot



Heave: Uneven or raised portion of the sidewalk that could be a trip hazard, usually caused by tree roots or soil expansion after a period of frost.



6. Steepness of sidewalk

- a. How steep is the sidewalk at the steepest point in the segment? (*Excluding heaves*)
_____ degrees ☐ No sidewalk
- b. How much of the segment is at or near this level of steepness?
☐ Little (1-25%) ☐ Some (26-75%)
☐ Most or All (76-100%) ☐ No sidewalk
- c. If answer to 6(b) is "Little," provide a steepness measure that represents the majority of the segment
_____ degrees ☐ No sidewalk ☐ N/A

Steepness

Driveway curb slope does NOT count



These questions are really trying to get at the grade of the **sidewalk**.

7. What is the steepest unavoidable cross-slope that affects walkers?
_____ degrees ☐ No sidewalk



Cross-Slope:

A sideways slope that is unavoidable for the pedestrian to encounter.

- The steepest unavoidable cross-slope that affects walkers may not necessarily be the driveway/curb slope unless it can't be avoided
- If it can't be avoided, measure from the part of the sidewalk that is closest to the house (the least steep part)

8. **Permanent Obstructions**

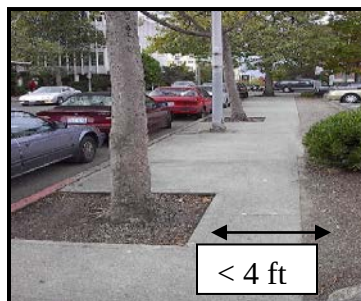
Are there permanent obstructions in the sidewalk?

(e.g., telephone poles, trees, café tables, shrubs, basketball hoops)

☐ None ☐ Some ☐ Many ☐ No sidewalk

- a. **Sidewalk Obstructions:** Objects that disrupt the normal flow of pedestrian traffic. Sidewalk obstructions must be in the walkway space, not in the buffer.
- b. **Permanent Obstructions:** This means the obstruction narrows the walkway to less than 4 feet and cannot be easily removed from its location (e.g., fire hydrants, trees or light posts).

Many Obstructions



9. Temporary Obstructions

Are the temporary obstructions in the sidewalk?
(e.g., parked cars, sandwich boards, garbage cans)

☐ None ☐ Some ☐ Many ☐ No sidewalk

- a. **Temporary Obstructions:** They can be removed if necessary with relatively little effort or effect on the sidewalk (e.g., sandwich signs, parked cars or garbage cans).



- b. **Height obstruction:** If a segment's walking path is obstructed by something jutting out so that the average person (5'6") would need to duck to avoid it, you can count this as either a temporary (tree branch, overgrowth, etc.) or permanent (metal overhang) obstruction.

10. Traffic Lanes

How many traffic lanes are present (include all lanes that traffic can use; choose most predominant)?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

Number of traffic lanes: Count center turn lanes and vehicle parking lanes

Examples of width: This question is trying to get at the size of the street, so if there is parking allowed on each side of the street and 2 cars can pass each other at the same time, this would be counted as 4. If 2 cars cannot pass each other with parking available on both sides of the street, it will be counted as 3 lanes.

4 lanes including a turn & parking lane



8 lanes



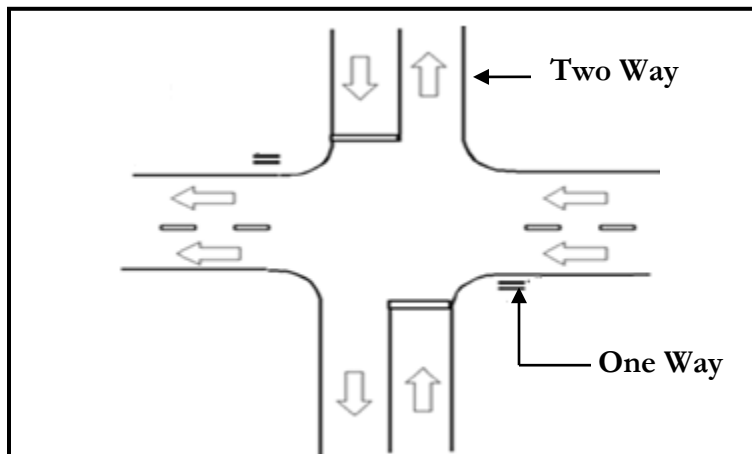
4 lanes – residential



11. Street Direction (one-way vs. two-way)

Is the street predominantly one-way or two-way?

- ☐ 1-way ☐ 2-way



12. Other safe places to walk

If no sidewalk, is there any other place to walk that is safe from traffic?

- ☐ Yes
- ☐ Unpaved pathway (goat path)
 - ☐ Street shoulder
 - ☐ Buffer
- ☐ No
- ☐ N/A Sidewalk present

If question 1 (presence of sidewalk) is marked “yes”, questions 12 & 13 will always be N/A.

Unpaved pathway



Street Shoulder



Buffer



- a. **Unpaved pathway:** A safe place to walk that is unpaved (i.e., dirt, rock).
- b. **Street shoulders:** Only count street shoulders marked with street lines. If there are no lines, there is no safe place to walk. Rollover curbs do not count as street shoulders. Bike lanes are treated like a traffic lane in this case, so they are not counted as a safe place to walk.
- c. **Buffer:** No sidewalk is present, but there is a place to walk on grass that is not private property.

If buffer is marked here, it should not be marked for question 3. Therefore, question 3a would be “no” and question 3b would be N/A.

13. Width of safe place to walk

If no sidewalk, what is the width of the place on which one could safely walk? (*Not in possible path of traffic*)

☐ None ☐ < 4 ft. ☐ ≥ 4 ft. ☐ N/A

14. Marked Bike Lane

Is there a marked bicycle lane marked with a line or a raised curb?

☐ Yes ☐ No

Raised Curb



Marked with line



Raised Curb



Marked bicycle lanes must be on the same side of the street that is being rated

15. Bike Use Signs

Are there any signs indicating bicycle use (share the road, etc.)?

☐ Yes ☐ No



- The bike symbol painted on the road counts as a bike use sign.
- If there is no bike lane, but a bike sign, mark “no” for Q14 (bike lane) and yes for Q15 (bike sign).

16. Signs discouraging skateboarding

Are there any signs or structures discouraging skateboard usage?

☐ Yes ☐ No

Must be on the same side of the street that is being rated

17. Informal Path

Is there an informal path (shortcut), not on a cul-de-sac, which connects to something else?

☐ Yes ☐ No

Alley



Path between buildings



Informal path: Must intersect the street segment and provide a path to a destination that is different and shorter than the network (e.g., alley, dirt path to a park, etc.). An informal path can be dirt; it doesn't need to be paved.

18. Dead-end-street

a. Is this a dead-end street?

☐ Yes ☐ No

Dead-end street: A street with only one way in and out.

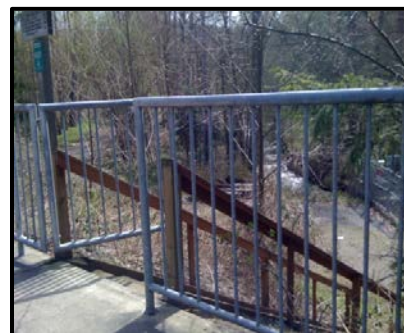
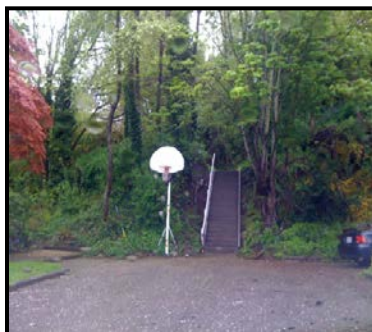
The segment is counted as a dead-end even if it ends behind you (not in the direction you are walking) as **long as it is on your segment**. You will not count a dead-end if just the street name ends and a new street begins (i.e. if the street L's, one name ends and another begins).



Paved or informal path at the end of a cul-de-sac

b. Is there a paved or informal path at the end of the cul-de-sac or dead end street that connects to something else?

☐ Yes ☐ No ☐ N/A



19. Floor/Street Level Windows

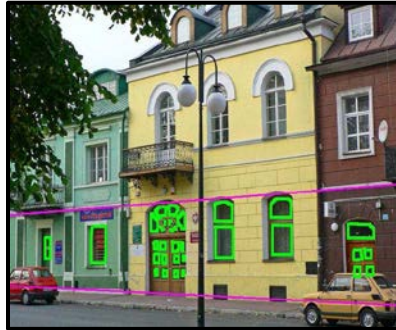
Estimate the proportion of street segment that has ground floor or street-level windows within 40 feet of sidewalk/walkway (or street if no sidewalk/walkway)

☐ 1-25% ☐ 26-50% ☐ No windows
☐ 51-75% ☐ 76-100%

26-50%



76-100%



- ONLY count windows within 40 ft of the sidewalk/walkway, or street if no sidewalk/ walkway exist.
- Two car lengths is a good measure of 40ft. Anything within two car lengths would be rated.

If there is one building with mostly windows that covers about $\frac{1}{4}$ of the segment, check 25% (amount of the segment covered by windows), not 100% (amount of windows on the buildings).



Raters should count only house entrance-level windows in this estimation, even if the entrance is set up on a porch. Therefore, basement level windows would not count in this estimation. If there is a *temporary* obstruction blocking the windows (i.e., a motor home parked in the way), still include the blocked windows in the window percentage.

20. Predominant Façade Colors

How many different predominant building façade colors exist on the street segment? (*Count both sides of the street*)

- ☐ 1 ☐ 2-3 ☐ 4-6 ☐ >6 ☐ N/A

Count both sides of the street

Predominant Façade Colors: Colors used for the building's façade.

In residential neighborhoods colors tend to blend more and can be different shades of the same color. In this case, different shades of the same color should be scored as one predominant façade or accent color.

3 colors (yellow, beige, blue/gray)



3 Colors (yellow, pink/purple, blue)



21. Accent Colors

How many different building accent colors exist on the street segment? *(Count both sides of the street)*

☐ 1 ☐ 2-3 ☐ 4-6 ☐ >6 ☐ N/A

Count both sides of the street

Accent Colors: Colors used for building trims and roofs, street objects, awning signs, etc.

Gold, white, brown, teal



- Check the N/A option only when there are no buildings on the segment
- If the accent color on the house(s) is the same as the house color, mark one for accent color.

22. Building Materials

How many different predominant building materials (e.g., brick, concrete, steel, wood) exist along the street segment? (Count both sides of the street)

☐ 1 ☐ 2-3 ☐ 4-6 ☐ >6 ☐ N/A

Count both sides of the street

Wood



Brick



Stucco



23. Trees

How many trees exist within 5 feet of either side of the sidewalk/pathway (can be in buffer or setback; also count trees that are more than 5 feet away if they provide shade for the sidewalk/pathway)?

☐ 0 or 1 ☐ 2-5 ☐ 6-10 ☐ 11-20 ☐ 21+ ☐ N/A

Number of trees: Trees planted in the buffer, walkway, or setback (within 5 feet of the sidewalk or pathway).

- Count trees that are more than 5 feet away if they provide shade for the sidewalk/pathway (i.e. at the edge of front yards).
- Question 23-25 would be N/A if there is no sidewalk, buffer, walkway, or safe place to walk then you would not count the number of trees, spacing of trees, or coverage.

24. Evenly vs. Irregularly

How are the trees generally spaced?

☐ Evenly spaced ☐ Irregularly spaced ☐ N/A

Mark N/A if
0-1 trees

Evenly



Irregularly



- a. **Evenly spaced trees:** Trees are spaced in equal increments along the walkway or buffer – planted purposefully. If both options are available in the segment, select the “evenly spaced” option.
- b. **Irregularly spaced trees:** Trees are spaced in an uneven or random pattern – not purposeful for shade/aesthetics.

25. Tree Coverage

What percentage of the length of the sidewalk/walkway is covered by trees, awnings or other overhead coverage?

- ☐ 1-25% ☐ 25-50% ☐ No coverage
☐ 51-75% ☐ 76-100% ☐ N/A

Mark N/A if
no trees

Tree Coverage: Tree Coverage is the percent of walkway covered by trees, awnings, or other structures providing shade to the walkway. It need not cover the entire width of the sidewalk. Depending on the time of the year, trees may lose their leaves, so make sure to visualize the trees with their full foliage.

76-100% coverage



Setbacks

26. What is the smallest building setback from the sidewalk?

- ☐ No building ☐ <10 feet ☐ 10-20 feet
☐ 21-50 feet ☐ 51-100 feet ☐ >100 feet

27. What is the largest building setback from the sidewalk/walkway?

- ☐ No building ☐ <10 feet ☐ 10-20 feet
☐ 21-50 feet ☐ 51-100 feet ☐ >100 feet

<10 ft



>100 ft – Canyon with house behind



Building setback from the sidewalk/walkway: The required separation between a lot line (and/or right-of-way line) and a building or structure. This could be any building (inhabited or not), or any vertical building face excluding gates and fences can be taken into consideration when calculating smallest and largest setback.

- Staggered homes/apartment buildings **would** count, but houses/buildings set directly behind one another **would not**. Raters can imagine shining a laser pointer toward the buildings, and any building face they hit will be taken into consideration.
- Use the “no building” answer choice only for segments which have no buildings at all. If there is an empty lot between houses and nothing behind it, use the >100 feet answer choice.
- If there is only 1 house on a block that house will most likely be the smallest and largest setback, unless there is a canyon or empty lot next to it.

28. Building Height

What is the average height of buildings? (*Count both sides of the street*)

- ☐ No building ☐ 1-2 stories ☐ 3-5 stories
☐ 6-10 stories ☐ >10 stories

Count both sides of the street

Building height: It includes the number of floors, including the roof floor of buildings with slanted roofs and dormers and any visible sunken floors.

2 Stories



5 stories



> 10 stories



Level 3: Crossing

a. Crossings and Intersections

Crossing	Occurs when the rater must go through an intersection, whether a pedestrian crossing exists or not
Segment ID #	The data manager will fill this in, as a rater, leave blank
Auditor ID #	This is the rater ID number, which is unique to each rater.
Intersection	- Record names of the 2 streets intersecting at the crossing. - If this is an unanticipated mid-segment crossing, write down the address of the house/building on either side.
Crossing from	Record side of the street you start on and then the side of the street you end on.

1. Intersection Control

Intersection control

Check all that apply

- ☐ Yield signs
- ☐ Stop signs
- ☐ Traffic signal
- ☐ Traffic circle
- ☐ N/A – Unanticipated mid-segment crossing
- ☐ None of the Above

Rater should rate all of the elements in the entire intersection for this question



Stop signs and traffic signals

- Ensure that vehicles will stop for a certain period of time to allow other vehicles, pedestrians, and non-motorized vehicles to cross the intersection



Yield signs

- Indicate right-of-way



Traffic circle

- When traffic must travel in one direction around a central island

If you have an unanticipated mid-segment crossing:

- End your segment, complete a crossing survey, and begin a new segment on the other side of the street
- Fill in the cross streets with the address you started with and the address of the house/building that you're ending with



2. Intersections

Number of legs at intersection

Check one

- ☐ T-intersection
- ☐ 4-way intersection
- ☐ > 4-ways
- ☐ N/A (Check when it is an unanticipated mid-segment crossing.)

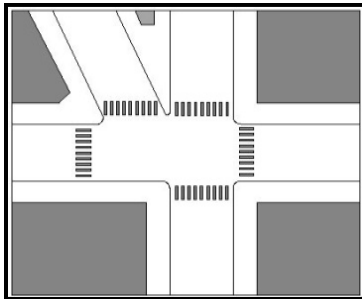
T-Intersection



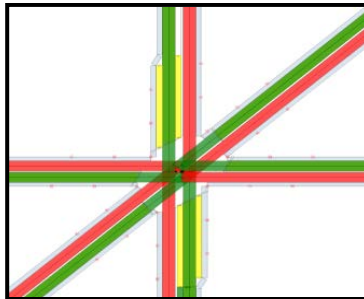
4-way Intersection



5-way Star Intersection



6-way Intersection



- a. **Intersection:** The meeting point of two or more street segments.
- b. **T-intersection:** When one leg of a 4-way intersection is blocked off so cars cannot use it.
- c. **4-way intersection:** Traffic can be one-ways or two-ways, but there are 4 legs to the intersection. This does not have to be a perfect cross (+).

3. Signalization

Signalization

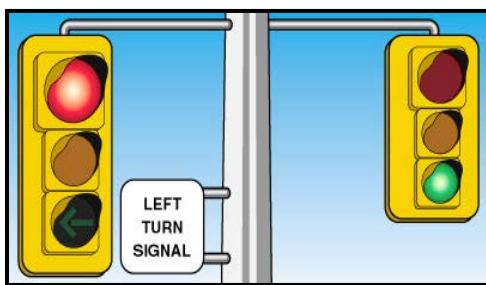
Check all that apply

- ☐ Green arrows for dedicated vehicle turn
- ☐ Pedestrian walk signals
- ☐ Push buttons
- ☐ Countdown signal

- ☐ Audible walk signal
- ☐ None of the Above

- a. **Green arrows for dedicated vehicle turn:** Signal has green arrows for drivers.
- b. **Pedestrian walk signals:** Some indication for pedestrians to know when to walk or don't walk.
- c. **Push button:** Actual button for pedestrians to push to indicate they are waiting to cross.

Green arrow for dedicated vehicle turns



Push button



- d. **Countdown Signal:** Both pedestrian triggered and automatic signaling systems are programmed to indicate safe crossing for specified periods of time.
- e. **Audible Walk Signal:** A beep that indicates it is time to walk.

Countdown Signal & Pedestrian Walk signal



4. **Crosswalk timing**

Crosswalk timing: _____ seconds
 (Length includes white "walk" time + flashing red "don't walk" time)

- ☐ No crosswalk ☐ No signal

Use the stopwatch to write down the number of seconds to the nearest hundredth place

5. Pre-crossing curb

a. Pre-crossing curb *(Even if there is no marked crosswalk, there is still a crossing)*

Check one

- ☐ Ramp lines up with crossing
- ☐ Ramp does not line up with crossing
- ☐ No ramp

b. Post-crossing curb

Check one

- ☐ Ramp lines up with crossing
- ☐ Ramp does not line up with crossing
- ☐ No ramp

**Ramp lines up with crossing
with crossing**



**Ramp does not line up
with crossing**



No ramp

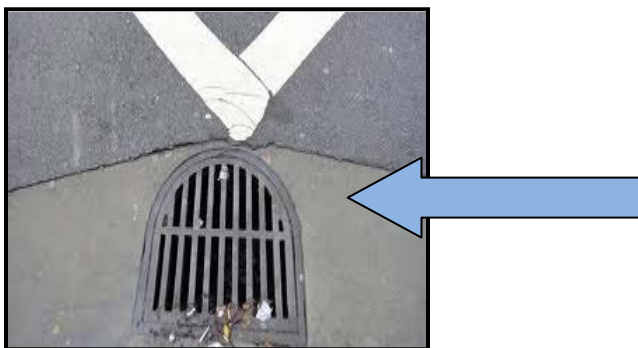


6. Gutter presence

Gutters present in crossing

Within possible path of crossing pedestrians

- ☐ Yes
- ☐ No



Gutters must be within possible path of crossing pedestrians

7. Other Characteristics

Other characteristics of crossing

Check all that apply

- ☐ Steep slope or steep cross-slope at intersection
- ☐ Temporary obstructions
- ☐ Crossing aids (e.g., flags)
- ☐ None of the Above

Temporary obstruction (e.g., parked car)



Crossing aids



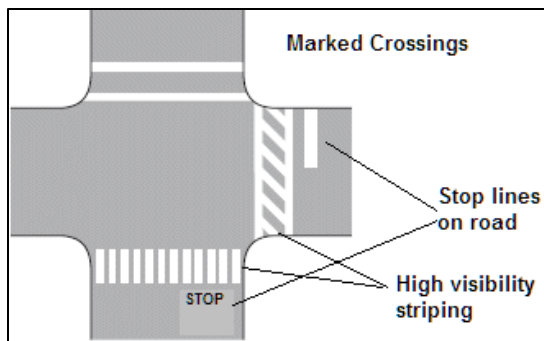
8. Crosswalk Treatments

Check all that apply

- ☐ Marked crosswalk
- ☐ High-visibility striping
- ☐ Stop lines on road or additional crosswalk warnings
- ☐ Raised crosswalk
- ☐ Different material than road
- ☐ None of the Above

- a. Marked crosswalk:** A crosswalk is a designated point on a road at which some means are employed to assist pedestrians wishing to cross. They are designed to keep pedestrians together where they can be seen by motorists, and where they can cross most safely with the flow of vehicular traffic. Pedestrian crossings are often at intersections, but may also be at other points on busy roads that would otherwise be perilous to attempt to cross.

Stop lines & marked crosswalk



- b. **High-visibility striping:** Usually indicated by ladder or diagonal striping or unique lighting, striping for the crosswalk that is more visible to drivers than simple parallel lines. (Example: 2 yellow lines would count here)
- c. **Stop Lines on Road:** Usually lines that extend across half of an intersection (for two-way roads). Striping intended for **traffic use** at an intersection or crossing, indicating where vehicles should stop. These can occur simultaneously with marked crosswalks.

Raised crosswalk



Different material



- d. **Raised crosswalks:** Indicate the crossing path by a surface slightly elevated from the street pavement.
- e. **Different Material than road:** Crosswalks characterized by variations in the material along the crosswalk that distinguishes it from the street portion dedicated to vehicular traffic.

9. Bike lane crosses the crossing

Bike lane crosses the crossing?

☐ Yes ☐ No



Crossing



Record only for the street on the same side as the segment being rated

10. Distance of crossing

Distance of crossing leg, including all potential parking and turn lanes _____ lanes wide

11. Features

Features

Check all that apply

- ☐ Specifically identified lanes **turning into crossing**
 - ☐ Right turn ☐ Left turn
- ☐ Protected refuge islands
- ☐ One-way streets **through crossing**
- ☐ Curb extension
- ☐ None of the Above



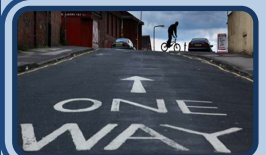
Lanes turning into crossing

Specifically identified turn lanes (right or left) that would mean traffic will be crossing through your crossing.



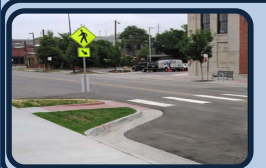
Raised Median or Refuge Island

It is an elevated area in the middle of the crosswalk or crosswalk area of a roadway. It is sometimes fitted with a gap to allow pedestrians to walk through at a crosswalk.



One-way street

A street in which vehicular traffic is allowed to move in only one direction.



Curb extensions

Used at traffic calming, curb extensions are comprised of an angled narrowing of the roadway and a widening of the sidewalk.

12. Miscellaneous Problems

Miscellaneous problems

Check all that apply

- ☐ Lack of lampposts or overhead street lamps
- ☐ Poor condition of crossing surface
- ☐ Poor visibility at corners
- ☐ Faded or worn crosswalk markings
- ☐ Unanticipated mid-segment crossing

Reason: _____

- ☐ Other: _____
- ☐ None of the Above

Poor crossing surface



Poor visibility at corner



Faded/Worn Crosswalk



- a. **Lack of lamp posts:** There are no lampposts or overhead street lamps lighting the intersection.
- b. **Poor Condition of Crossing Surface:** Pedestrian would need to look down at the ground to feel confident that they could cross without encountering a trip hazard.
- c. **Poor visibility at corners:** Pedestrian would feel uneasy about crossing the street because it is difficult for drivers to see them (i.e., a blind corner)
- d. **Faded or Worn Crosswalk:** Majority of crosswalk within direct route of traffic is **not** clearly visible.
- e. **Unanticipated mid-segment crossing:** A pedestrian crossing located mid-segment (not at an intersection). Typically found near schools or other pedestrian destinations. Write in the text field why there was an unanticipated mid-segment crossing.
- f. **Other:** Write in any additional information necessary. If crossed at an intersection and therefore unanticipated mid-segment crossing wouldn't be marked, and it is unclear why the rater may have crossed in that particular spot, mark 'other' and write in the reasoning (i.e. no sidewalk ahead)

Level 4: Cul-de-Sacs

The cul-de-sac or street dead-end to be rated must be within 400 feet of the participants' home and will usually (but not always) be the dead-end part of the participant's street. The participant's home is considered to be at the mid-point along the sidewalk or pathway in front of the home (house or apartment building). The cul-de-sac opening is the point at which the street widens or bulbs out. The street dead-end opening is 50 feet from the end of the street or to the first driveway, whichever is furthest.

Cul-de-sac/Court: A dead-end street with only one inlet/outlet. They are created to limit through-traffic in residential areas. While some cul-de-sacs provide no possible passage except in and out of their road entry, others allow cyclists, pedestrians or other non-automotive traffic to pass through connecting easements or paths.

Cul-de-sac ID#	• The data manager will fill this in, as a rater, leave blank
Auditor ID #	• This is the rater ID number, which is unique to each rate
Street Name	• Rater should write down the name of the street that the cul-de-sac is on

Small cul-de-sac



Large cul-de-sac



Dead-end

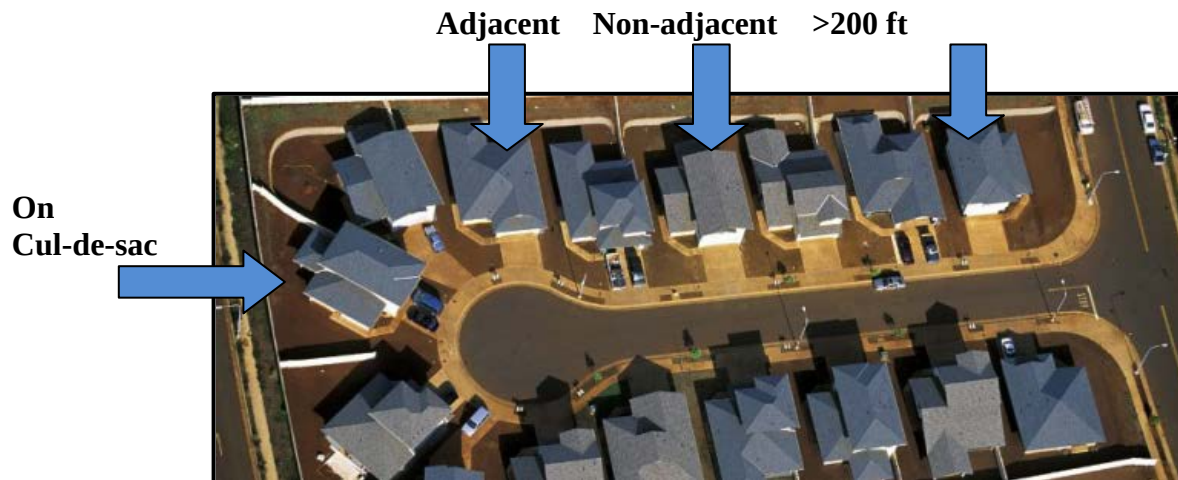


1. Proximity to participant

How close is the cul-de-sac or dead-end to the participants' home?

Check one

- ☐ On the cul-de-sac
- ☐ Adjacent to the cul-de-sac (one or two homes/houses removed from cul-de-sac opening)
- ☐ Non-adjacent, but less than 200 feet away
- ☐ More than 200 feet away

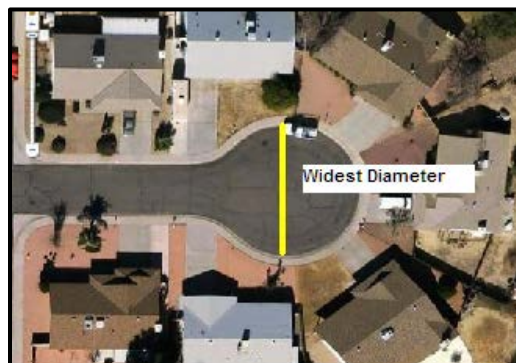


2. Largest Diameter of cul-de-sac

How big is the cul-de-sac or dead-end at its largest diameter?

Check one

- ☐ ≤ 50 feet
- ☐ 51 – 100 feet
- ☐ 101 – 200 feet
- ☐ > 200 feet



3. Incline/grade

What is the incline/grade of the:

Cul-de-sac or dead-end at its steepest point:

_____ degrees

Street at the opening to the cul-de-sac or dead-end:

_____ degrees

Measure the cul-de-sac opening pointing toward the end of the cul-de-sac.

4. Percent paved

What percentage of the cul-de-sac or dead-end is paved?

Check one

- ☐ <25%
- ☐ 25-50%
- ☐ 51-75%
- ☐ > 75%

5. Smoothness of Pavement

For the paved part of the cul-de-sac or dead-end, how smooth is the pavement?

Check one

- ☐ Not smooth at all – a lot of bumps or cracks
- ☐ Somewhat smooth – a few major bumps or cracks
- ☐ Mostly smooth – minor bumps or cracks
- ☐ Very smooth – few or no bumps or cracks

Not smooth at all



Somewhat smooth



Mostly Smooth



Very smooth



6. Cul-de-sac Amenities

What amenities exist at the opening to or along the cul-de-sac or dead-end portion of the street?

Check all that apply

- ☐ Basketball hoops _____ number
- ☐ Skateboard features (e.g., ramps) _____ number
- ☐ Streetlights _____ number
- ☐ Pedestrian or other safety signage (e.g., children at play)
- ☐ Other; describe _____
- ☐ None of the Above

Amenities need to be at the opening to or in the cul-de-sac or dead-end portion of the street to be counted here. A basketball hoop that is a couple houses away from the opening will not count here because these are probably less communal, whereas an amenity on the cul-de-sac would be considered much more of a shared resource (e.g., anybody living on the cul-de-sac or near it can use it).

Basketball hoop



Skateboard Feature



Pedestrian signage



Visibility of the cul-de-sac

7. Can most of the cul-de-sac or dead-end area be seen from the participant's home (using the most optimal viewpoint from the home, including higher story windows)?
☐ Yes ☐ No
8. Can most of the cul-de-sac or dead-end area be seen from other homes (using the most optimal viewpoint from the home, including higher story windows)?
☐ Yes ☐ No

Surveillance would be difficult



Surveillance would be easier



9. Number of driveways

_____ driveways enter into the cul-de-sac or dead-end area?

10. Cul-de-sac with Center Island

Is there an island in the cul-de-sac or dead-end area?

☐ Yes ☐ No



11. Parking

Is parking allowed (not prohibited) in the area?

☐ Yes ☐ No



12. End of cul-de-sac

- a. Is there access through the end of the cul-de-sac or dead-end street to another public street or area?

☐ Yes ☐ No *If no, done with section.*

- b. *If yes*, what type of access?

Check all that apply

- ☐ Formal: A planned formal path with a paved, marked or deliberate surface.
☐ Informal: An informal path that is unpaved, not marked and could be considered a shortcut.
☐ Informal, no path

- c. *If yes*, what is on the other side?

Check all that apply

- ☐ Another street
☐ A recreation or play area (can be part of a school)
☐ Open space
☐ Commercial or retail area
☐ Other _____

Formal: Planned formal path



Informal: Unpaved pathway, not marked



Informal: no path leading to another street



Date _____ Auditor ID# _____

Route # _____

Start Time: _____

End Time: _____

Route:

Section: Land use/destinations

Count both sides of the street

1. How is audit information collected?

- ☐ Foot (walked route)
☐ Auto (drove route)
☐ Both (walked & drove route)

2. What parking facilities are present?

Check all that apply

- ☐ None
☐ On-street, parallel or angled parking
☐ Small lot or garage (< 30 spaces)
☐ Medium to large lot or garage

3. What types of residential uses?

Check all that apply

- ☐ Single family houses
☐ Multi-unit homes (duplex, 4-plex, row house)
☐ Apartments or condominiums
☐ Apartments above street retail
☐ Retirement/senior living facility
☐ Other (mobile home, dormitory)
☐ None

4. How many of the non-residential buildings are adjacent to the pedestrian walkway or sidewalk and/or street?

(Adjacent to sidewalk and street means that there is not a yard, parking lot or other space blocking entrances between the sidewalk and the building)

- ☐ 0%
☐ 1-33% ☐ 34-66%
☐ 67-99% ☐ 100%
☐ N/A (all residential buildings)
☐ N/A (no pedestrian walkway/sidewalk)

5. How many of the non-residential buildings have parking lots or drives between the pedestrian walkway or sidewalk along the street and their entrances?

- ☐ 0%
☐ 1-33% ☐ 34-66%
☐ 67-99% ☐ 100%
☐ N/A (all residential buildings)
☐ N/A (no pedestrian walkway/sidewalk)

6. How many of the following types of non-residential destinations are present? (Do not double count.)

Food-related land usesa. Fast food restaurant (*national or local chain, primarily sells burgers, fried chicken, pizza, or "Americanized" Mexican, Chinese, etc.*)

- ☐ 0 ☐ 1 ☐ 2+

b. Sit-down restaurant

- ☐ 0 ☐ 1 ☐ 2+

c. Grocery/supermarket

- ☐ 0 ☐ 1 ☐ 2

d. Convenience store (*may also be a gas station*)

- ☐ 0 ☐ 1 ☐ 2+

e. Café or coffee shop

- ☐ 0 ☐ 1 ☐ 2+

f. Liquor/alcohol store (*primarily sells alcohol, wine bar, strip club*)

- ☐ 0 ☐ 1 ☐ 2+

g. Big box store (*e.g., Home Depot, Best Buy, Sears, Super Walmart, Target*)

- ☐ 0 ☐ 1 ☐ 2+

h. Specialty Food Store (*e.g., ice cream, candy, bakery*)

- ☐ 0 ☐ 1 ☐ 2+

Retail and service oriented land uses

i. Pharmacy or drug store

- ☐ 0 ☐ 1 ☐ 2+

j. Bank or credit union

- ☐ 0 ☐ 1 ☐ 2+

k. Health-related professional (*e.g., chiropractor, Dr. office*)

- ☐ 0 ☐ 1 ☐ 2+

l. Entertainment (*e.g., movie theatre, arcade*)

- ☐ 0 ☐ 1 ☐ 2+

m. Other service (*e.g., salon, lawyer, accountant, realtor, laundry/dry cleaner, commercial mailing service*)

- ☐ 0 ☐ 1 ☐ 2+

n. Other retail (*e.g., books, clothing, hardware, video rental*)

- ☐ 0 ☐ 1 ☐ 2+

Government or community land useo. Health or social services (*e.g., hospital, health department, community action agency, police/fire stations, city hall, etc.*)

- ☐ 0 ☐ 1 ☐ 2+

p. Library/Museums

- ☐ 0 ☐ 1 ☐ 2+

q. Post office

- ☐ 0 ☐ 1 ☐ 2+

r. Senior center

- ☐ 0 ☐ 1 ☐ 2+

s. Place of worship (*e.g., church, synagogue, convent, mosque, etc.*)

- ☐ 0 ☐ 1 ☐ 2+

t. School

- ☐ 0 ☐ 1 ☐ 2+

Other land use

u. Warehouse/factory/industrial

- ☐ 0 ☐ 1 ☐ 2+

v. Abandoned building

- ☐ 0 ☐ 1 ☐ 2+

w. Unmaintained lot/field

- ☐ 0 ☐ 1 ☐ 2+

x. Casino

- ☐ 0 ☐ 1 ☐ 2+

Recreational land use

y. Community garden

- ☐ 0 ☐ 1 ☐ 2+

z. Private indoor (*e.g., commercial gyms, dance clubs*)

- ☐ 0 ☐ 1 ☐ 2+

aa. Public indoor (*community centers*)

- ☐ 0 ☐ 1 ☐ 2+

ab. Private outdoor (*e.g., private golf course, commercial outdoor recreation*)

- ☐ 0 ☐ 1 ☐ 2+

ac. Public outdoor pay (*e.g., pool*)

- ☐ 0 ☐ 1 ☐ 2+

ad. Public park

- ☐ 0 ☐ 1 ☐ 2+

7. Shopping Centers

Check all that apply

- ☐ Shopping Mall
☐ Strip Mall
☐ Shopping Arcade
☐ None of the above

Route

Section: Streetscape

Count both sides of the street

1. Number of public transit stops

If NO stops, skip to 3.

(a) Bus stops _____

(b) Senior transit/paratransit _____

2. What is available at each transit stop?

Only count benches that users could be easily identified by bus drivers as waiting to ride the bus.

Route # _____

☐ Bench ☐ Covered Shelter ☐ Timetable

Route # _____

☐ Bench ☐ Covered Shelter ☐ Timetable

Route # _____

☐ Bench ☐ Covered Shelter ☐ Timetable

Route # _____

☐ Bench ☐ Covered Shelter ☐ Timetable

3. Is there a posted speed limit along the route?

If multiple, select the highest

Regular

☐ Yes _____ mph ☐ No

Special zone (school, construction)

☐ Yes _____ mph ☐ No

4. What other street characteristics are present?

(specify # of each type)

Check all that apply

- ☐ Traffic calming (signs, circles, speed tables, speed humps, curb extension) _____
- ☐ Roll-over curbs _____ (if whole segment = 1)
- ☐ Drainage ditches _____ (count one side of street)
- ☐ Instructional signs for pedestrian's _____
- ☐ Crosswalk signage or other pedestrian signage (for drivers) _____
- ☐ None of the Above

5. Are street lights installed?

- ☐ None
- ☐ Some (e.g., overhead street lights on utility poles with wide spacing)
- ☐ Ample (e.g., regularly spaced pedestrian lampposts)

6. How many driveways or alleys are there? Count only segment side of the street.

(Count only alleys that are wide enough to be used by cars or other vehicles that could impede pedestrian traffic.)

- ☐ None ☐ 1-2 ☐ 3-5 ☐ 6+

7. Presence of street amenities

Check all that apply

- ☐ Building overhangs that provide shelter from inclement weather in public space (i.e. sidewalks)
- ☐ Trash bins (public)
- ☐ Benches or other places to sit
- ☐ Bicycle racks
- ☐ Working drinking fountain
- ☐ Working public telephones
- ☐ Kiosks or information booths
- ☐ None of the Above

8. Presence of any mid-segment street crossing, where an individual could safely cross (marked by sign or crosswalk)?

- ☐ Yes ☐ No

Section: Aesthetics and Social

Count both sides of the street

1. Do you observe pleasant hardscape features, such as fountains, sculptures, or art (public or private)?

- ☐ Yes ☐ No

2. Do you observe softscape features such as gardens or landscaping (e.g., Public: bodies of water, designated viewpoints; Private: retaining walls, bark, ponds)?

- ☐ Yes ☐ No

3. Are there observable historic or cultural features along the route (not further than one street segment away from route and can be seen from the route)?

- ☐ Yes ☐ No

4. Are the buildings well maintained?

- ☐ 0% ☐ 1-49% ☐ 50-99% ☐ 100%

5. Is landscaping well maintained?

- ☐ 0% ☐ 1-49% ☐ 50-99% ☐ 100%

6. Which of the following physical disorders are present?

Check all that apply

- ☐ Graffiti/tagging (not murals)
- ☐ Abandoned cars
- ☐ Buildings with broken/boarded windows
- ☐ Drug paraphernalia
- ☐ Broken glass
- ☐ Beer/liquor bottles/cans
- ☐ Litter in yards
- ☐ Noticeable/excessive litter in street/sidewalk
- ☐ Neighborhood watch signs
- ☐ Signage for commercial destinations or parks
- ☐ None of these

7. Rate the extent of physical disorder (question 6)

(e.g., litter, graffiti, broken glass, abandoned cars)

- ☐ None
- ☐ A little (physical/social disorder is present)
- ☐ Some (disorder is very noticeable)
- ☐ A lot (disorder is overwhelming)

8. Rate the extent of social disorder (e.g., stray dogs, gangs, prostitution, hostile behaviors, drug dealing, panhandlers, etc.)

- ☐ None
- ☐ A little (physical/social disorder is present)
- ☐ Some (disorder is very noticeable)
- ☐ A lot (disorder is overwhelming)

9. Other obstructions to walking

Check all that apply

- ☐ Railroad tracks (must obstruct walkway)
- ☐ Highway nearby (within one segment from walkway)
- ☐ Other: _____
- ☐ None

10. Presence of anyone walking?

- ☐ Yes ☐ No

Segment: Walkway/Sidewalks**Segment ID#** _____**Auditor ID #** _____**Type: Residential / Commercial****Street** _____ **Side N S E W****Starting Cross-street:** _____**Ending Cross-street:** _____

1. Is a sidewalk present?

☐ Yes ☐ No

2. What is the width of the majority of the sidewalk?

☐ < 3 ft. ☐ 3-5 ft. ☐ > 5 ft. ☐ No sidewalk3. (a) Is there a buffer present?☐ Yes ☐ No

(b) How wide is the majority of the buffer?

☐ < 3 ft. ☐ 3-5 ft. ☐ > 5 ft. ☐ N/A4. Is the sidewalk continuous within the segment?☐ Yes ☐ No ☐ No sidewalk5. Are there poorly maintained sections of the sidewalk that constitute trip hazards? (e.g., heaves, misalignment, cracks, overgrowth)a. Minor - moderate☐ None ☐ One ☐ A few ☐ A lot ☐ No sidewalkb. Major☐ None ☐ One ☐ A few ☐ A lot ☐ No sidewalk6. (a) How steep is the sidewalk at the steepest point in the segment? (*Excluding heaves*)_____ degrees ☐ No sidewalk

(b) How much of the segment is at or near this level of steepness?

☐ Little (1-25%) ☐ Some (26-75%)
☐ Most or All (76-100%) ☐ No sidewalk

(c) If answer to 6(b) is "Little," provide a steepness measure that represents the majority of the segment

_____ degrees ☐ No sidewalk ☐ N/A7. What is the steepest unavoidable cross-slope that affects walkers? _____ degrees ☐ No sidewalk

Entry 1: ID# _____ Date: _____

8. Are there permanent obstructions in the sidewalk?

(e.g., telephone poles, trees, café tables, shrubs, basketball hoops)

☐ None ☐ Some ☐ Many ☐ No sidewalk9. Are there temporary obstructions in the sidewalk?

(e.g., parked cars, sandwich boards, garbage cans)

☐ None ☐ Some ☐ Many ☐ No sidewalk10. How many traffic lanes are present (include all lanes that traffic can use; choose most predominant)?☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7+

11. Is the street predominantly one-way or two-way?

☐ 1-way ☐ 2-way12. If no sidewalk, is there any other place to walk that is safe from traffic?☐ Yes
☐ Unpaved pathway (goat path)
☐ Street shoulder
☐ Buffer
☐ No
☐ N/A Sidewalk present13. If no sidewalk, what is the width of the place on which one could safely walk? (*Not in possible path of traffic*)☐ None ☐ < 4 ft. ☐ ≥ 4 ft. ☐ N/A14. Is there a marked bicycle lane marked with a line or a raised curb?☐ Yes ☐ No

15. Are there any signs indicating bicycle use (share the road, etc.)?

☐ Yes ☐ No

16. Are there any signs or structures discouraging skateboard usage?

☐ Yes ☐ No

17. Is there an informal path (shortcut), not on a cul-de-sac, which connects to something else?

☐ Yes ☐ No

18a. Is this a dead-end street?

☐ Yes ☐ No

18b. Is there a paved or informal path at the end of the cul-de-sac or dead end street that connects to something else?

☐ Yes ☐ No ☐ N/A

Entry 2: ID# _____ Date: _____

19. Estimate the proportion of street segment that has ground floor or street-level windows within 40 feet of sidewalk/walkway (or street if no sidewalk/walkway)

☐ 1-25% ☐ 26-50% ☐ No windows
☐ 51-75% ☐ 76-100%20. How many different predominant building façade colors exist on the street segment? (*Count both sides of the street*)☐ 1 ☐ 2-3 ☐ 4-6 ☐ >6 ☐ N/A21. How many different building accent colors exist on the street segment? (*Count both sides of the street*)☐ 1 ☐ 2-3 ☐ 4-6 ☐ >6 ☐ N/A22. How many different predominant building materials (e.g., brick, concrete, steel, wood) exist along the street segment? (*Count both sides of the street*)☐ 1 ☐ 2-3 ☐ 4-6 ☐ >6 ☐ N/A

23. How many trees exist within 5 feet of either side of the sidewalk/pathway (can be in buffer or setback; also count trees that are more than 5 feet away if they provide shade for the sidewalk/pathway)?

☐ 0 or 1 ☐ 2-5 ☐ 6-10 ☐ 11-20 ☐ 21+ ☐ N/A

24. How are the trees generally spaced?

☐ Evenly spaced ☐ Irregularly spaced ☐ N/A

25. What percentage of the length of the sidewalk/walkway is covered by trees, awnings or other overhead coverage?

☐ 1-25% ☐ 25-50% ☐ No coverage
☐ 51-75% ☐ 76-100% ☐ N/A

26. What is the smallest building setback from the sidewalk?

☐ No building ☐ <10 feet ☐ 10-20 feet
☐ 21-50 feet ☐ 51-100 feet ☐ >100 feet

27. What is the largest building setback from the sidewalk/walkway?

☐ No building ☐ <10 feet ☐ 10-20 feet
☐ 21-50 feet ☐ 51-100 feet ☐ >100 feet28. What is the average height of buildings? (*Count both sides of the street*)☐ No building ☐ 1-2 stories ☐ 3-5 stories
☐ 6-10 stories ☐ >10 stories

Crossings

Crossing ID# _____

Auditor ID# _____

Intersection of _____ &

Crossing from **N S E W** to **N S E W**

1. Intersection control

Check all that apply

- ☐ Yield signs
- ☐ Stop signs
- ☐ Traffic signal
- ☐ Traffic circle
- ☐ N/A – Unanticipated mid-segment crossing
- ☐ None of the Above

2. Number of legs at intersection

Check one

- ☐ T-intersection
- ☐ 4-way intersection
- ☐ > 4-ways
- ☐ N/A

3. Signalization

Check all that apply

- ☐ Green arrows for dedicated vehicle turn
- ☐ Pedestrian walk signals
- ☐ Push buttons
- ☐ Countdown signal
- ☐ Audible walk signal
- ☐ None of the Above

4. Crosswalk timing: _____ seconds

(Length includes white “walk” time + flashing red “don’t walk” time)

- ☐ No crosswalk
- ☐ No signal

5. (a) Pre-crossing curb (Even if there is no marked crosswalk, there is still a crossing)

Check one

- ☐ Ramp lines up with crossing
- ☐ Ramp does not line up with crossing
- ☐ No ramp

(b) Post-crossing curb

Check one

- ☐ Ramp lines up with crossing
- ☐ Ramp does not line up with crossing
- ☐ No ramp

6. Gutters present in crossing

Within possible path of crossing pedestrians

- ☐ Yes
- ☐ No

7. Other characteristics of crossing

Check all that apply

- ☐ Steep slope or steep cross-slope at intersection
- ☐ Temporary obstructions
- ☐ Crossing aids (e.g., flags)
- ☐ None of the Above

8. Crosswalk treatment

Check all that apply

- ☐ Marked crosswalk
- ☐ High-visibility striping
- ☐ Stop lines on road or additional crosswalk warnings
- ☐ Raised crosswalk
- ☐ Different material than road
- ☐ None of the Above

9. Bike lane crosses the crossing?

- ☐ Yes
- ☐ No

10. Distance of crossing leg, including all potential parking and turn lanes

_____ lanes wide

11. Features

Check all that apply

- ☐ Specifically identified lanes **turning into crossing**
 - ☐ Right turn
 - ☐ Left turn
- ☐ Protected refuge islands
- ☐ One-way streets **through crossing**
- ☐ Curb extension
- ☐ None of the Above

12. Miscellaneous problems

Check all that apply

- ☐ Lack of lampposts or overhead street lamps
- ☐ Poor condition of crossing surface
- ☐ Poor visibility at corners
- ☐ Faded or worn crosswalk markings
- ☐ Unanticipated mid-segment crossing
- Reason: _____
- ☐ Other: _____
- ☐ None of the Above

Cul-de-sac

Culdesac ID# _____

Auditor ID# _____

Street name _____

In order for the cul-de-sac or street dead-end to be rated, it must be within 400 feet of the participants' home and will usually (but not always) be the dead-end part of the participants' street. The participant's home is considered to be at the mid-point along the sidewalk or pathway in front of the home (house or apartment building). The cul-de-sac opening is the point at which the street widens or bulbs out. The street dead-end opening is 50 feet from the end of the street or to the first driveway, whichever is furthest.

1. How close is the cul-de-sac or dead-end to the participants' home?
Check one
 - ☐ On the cul-de-sac
 - ☐ Adjacent to the cul-de-sac (one or two homes/houses removed from cul-de-sac opening)
 - ☐ Non-adjacent, but less than 200 feet away
 - ☐ More than 200 feet away
2. How big is the cul-de-sac or dead-end at its largest diameter?
Check one
 - ☐ ≤ 50 feet
 - ☐ 51 – 100 feet
 - ☐ 101 – 200 feet
 - ☐ > 200 feet
3. What is the incline/grade of the:
Cul-de-sac or dead-end at its steepest point:
_____ degrees
Street at the opening to the cul-de-sac or dead-end:
_____ degrees

4. What percentage of the cul-de-sac or dead-end is paved?
Check one
 - ☐ <25%
 - ☐ 25-50%
 - ☐ 51-75%
 - ☐ > 75%
5. For the paved part of the cul-de-sac or dead-end, how smooth is the pavement?
Check one
 - ☐ Not smooth at all – a lot of bumps or cracks
 - ☐ Somewhat smooth – a few major bumps or cracks
 - ☐ Mostly smooth – minor bumps or cracks
 - ☐ Very smooth – few or no bumps or cracks
6. What amenities exist at the opening to or along the cul-de-sac or dead-end portion of the street?
Check all that apply
 - ☐ Basketball hoops _____ number
 - ☐ Skateboard features (e.g., ramps) _____ number
 - ☐ Streetlights _____ number
 - ☐ Pedestrian or other safety signage (e.g., children at play)
 - ☐ Other; describe _____
 - ☐ None of the Above
7. Can most of the cul-de-sac or dead-end area be seen from the participant's home (using the most optimal viewpoint from the home, including higher story windows)?
☐ Yes ☐ No
8. Can most of the cul-de-sac or dead-end area be seen from other homes (using the most optimal viewpoint from the home, including higher story windows)?
☐ Yes ☐ No

9. _____ driveways enter into the cul-de-sac or dead-end area?
10. Is there an island in the cul-de-sac or dead-end area?
☐ Yes ☐ No
11. Is parking allowed (not prohibited) in the area?
☐ Yes ☐ No
- 12 (a). Is there access through the end of the cul-de-sac or dead-end street to another public street or area?
☐ Yes ☐ No If no, done with section.
- 12 (b). If yes, what type of access?
Check all that apply
 - ☐ Formal: A planned formal path with a paved, marked or deliberate surface.
 - ☐ Informal: An informal path that is unpaved, not marked and could be considered a shortcut.
 - ☐ Informal, no path
- 12 (c). If yes, what is on the other side?
Check all that apply
 - ☐ Another street
 - ☐ A recreation or play area (can be part of a school)
 - ☐ Open space
 - ☐ Commercial or retail area
 - ☐ Other _____