

Healthy Aging Research Network

Environmental Audit Tool & Protocol

Supported by the Centers for Disease Control and Prevention
Prevention Research Centers Program

Prevention Research Centers Healthy Aging Research Network (PRC-HAN)
<http://depts.washington.edu/harn/>

Background

This audit tool and protocol were designed to support a detailed quantitative and qualitative inquiry into community-scale and street-scale factors associated with physical activity in older adults. The tool includes an extensive set of environmental factors to enable a fine-grained audit of permanent, transient, and social environmental factors that may influence the likelihood of older adults to walk. The tool is the product of (1) extensive multi-site quantitative reliability testing and (2) qualitative walking interviews with older adults along familiar routes.*

Presently, this tool is for research purposes. Further work is necessary for the tool to be applied in a prescriptive or scoring fashion.

Some of the contextual factors that may be overlaid upon data collected with this tool include: person-environment fit, crime/personal safety, transportation environment, organizational initiatives for environmental improvements (e.g., within transportation departments, planning agencies, parks departments, or

neighborhood councils), ethnic or cultural variation, and pet ownership.

Special considerations for older adult populations consist of: living alone versus presence of a caretaker; capacity for activity; visual acuity; sensitivity to loud noises, bright lights and extreme temperatures; cognitive ability and memory; slower walking pace; susceptibility to steep inclines or cross-slopes; and a decline in bladder capacity.

Instructions for Use

These instructions help observers audit the built and social environments of neighborhoods and communities (quantitative approach). The methodological approach for qualitative evaluation (anthropological approach) is described elsewhere. Prior to collecting data in the field, auditors should be trained to use the tool and should be equipped with maps of the study area.

First—Choose a Sampling Approach

Begin by identifying the point of origin. Define a radius from that point (no larger than 0.5 miles). Choose a sampling approach:

- a) audit the entire area;
- b) audit particular routes (by identifying destinations);

- c) audit a randomly selected but designated number of segments for each area; or
- d) audit selected routes based on specified typologies (i.e., residential areas, commercial areas, mixed-use areas).

Second—Create Street Maps

For each study area, create maps that display all of the streets and intersections. This map may be produced either using a computer map database or by simply photocopying and enlarging a print map of the street network. If multiple auditors are assessing the environment, it is important to assign consistent identification numbers on the maps the auditors will use (see below). Mapping all segments and intersections in advance assists auditors in following correct segment protocol. Note that map data may not correspond to reality—be prepared to discover in the field that street segments on the map may not exist, and conversely, record any new segments that were not represented on the map.

Identify Street Segments

Each street or road in the study area is made up of one or more **segments**. A segment is a section of street or road between two intersections. If this is a rural area without intersections, treat each one-quarter mile

segment of that street as a separate segment for auditing purposes.

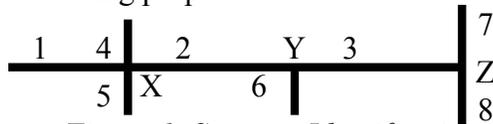


Figure 1. Segment Identification

Each segment and each intersection must have a unique identification number to facilitate organizing and analyzing data. Assign ID numbers to each of the street segments and each intersection to be included in the audit. ID numbers may be arbitrarily assigned and no specific numbering or lettering system is recommended.

Even if a sidewalk is continuous on one side of the street (as between intersection X and Z above) the T-intersection (as with X, Y, and Z above) means that these should be audited as two separate segments. A reference point should be noted on the continuous side so that no duplication of information occurs.

Develop a strategy to address each situation and have segment ID numbers prepared to use as back-up for these situations.

For GIS (Geographical Information System) purposes, each street segment is the “feature” for which audit “attributes” will be collected and recorded.

Definition: Block Face

Each segment has two block faces corresponding to the two sides of the street. This enables the audit to collect detailed

information to determine, for example, that there are sidewalks on only one side of the street. In a grid system of streets it should be straightforward to determine the compass direction corresponding to the side of the street. When the street angles result in a curving or ambiguous, prioritize the northern versus southern compass orientation of the street.

Definition: Intersection

Intersections are represented in Figure 1 by ‘X’, ‘Y’ and ‘Z’ (Y and Z are “T intersections”). Multiple street segments share the same intersection. In order to avoid duplication of data, intersections are assigned unique identifiers and are rated using the specially-designed HAN Intersection Audit Tool.

Definition: Origin

A trip “origin” refers to any place that may be a starting point for utilitarian, recreational, or combined purposes. Trips may originate from home, from an office, or from other settings, so the origin may or may not be residential.

Definition: Trip Destination

A destination refers to any place that may be visited for utilitarian (e.g., a store, a workplace, a place of worship) or for recreational purposes (e.g., a park, a beach, a movie theatre, a neighbor’s house). This definition includes residential and non-residential destinations.

Note on counting destinations: one building often contains more than one destination.

Nevertheless, it is not necessary to count all the destinations available in an urban office building—in these situations, simply count those destinations identifiable from the street. When a destination has a corner entrance or entrances on two streets, only count it for one of the segments.

Special Conditions for Training:

Residential and non-residential land-use (Q 3)

Land-use is the term to describe the purpose to which a parcel of land is put to use. If one observes a corner park or a day care on a block which is otherwise all residential, indicate “mostly residential”. If one observes a vacant lot on an otherwise residential block still indicate “mostly residential” even if that lot may be a residential building lot.

Sidewalk continuity at T-intersections or on Dead end streets (Q 14)

When auditing a street that ends in a T-intersection, sidewalks are “continuous between segments” if you could cross the far side and walk left or right on a sidewalk. If there are no sidewalks on the opposite side, then mark “no”. For dead end streets, ignore continuity, unless there is access to adjacent street.

Sidewalk Width Varies (Q 15)

If the sidewalk is under 4 feet in some areas and over 4 feet in other areas, check “both.” If the sidewalk has temporary obstructions, do not include these in determining the sidewalk width. If there is a permanent obstruction (e.g., a pole) that narrows a 4 foot sidewalk to under 4 feet, indicate that the sidewalk is ‘both.’

Curb Ramps Q 16

The terms “curb ramps” and “curb cuts” are used interchangeably to describe features that allow a wheelchair user to roll from the sidewalk to the street. Driveways found along the segment do not qualify. “Mountable curbs” are rounded curbs found in many subdivisions.

Illustrations of Segment Observations



(Q5) "Some" space between buildings



Sidewalk is Continuous between segments (Q11)

Curb ramp



Striping can delineate a shoulder, bike lane or parking (Q24)



Illustration of buffer (Q9)

Illustration of cross-slope (Q17)



Temporary Obstruction (Q22)



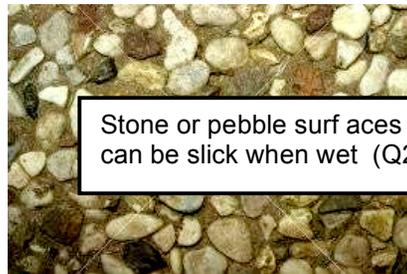
Permanent Obstruction (Q21)



Temporary Obstruction (Q22)



Sidewalk is not continuous within street segment (Q10)

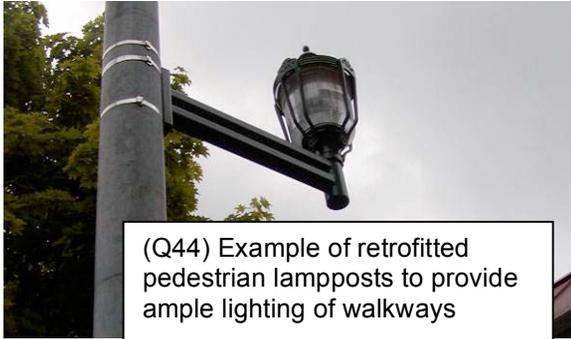


Stone or pebble surf aces in sidewalks can be slick when wet (Q23)

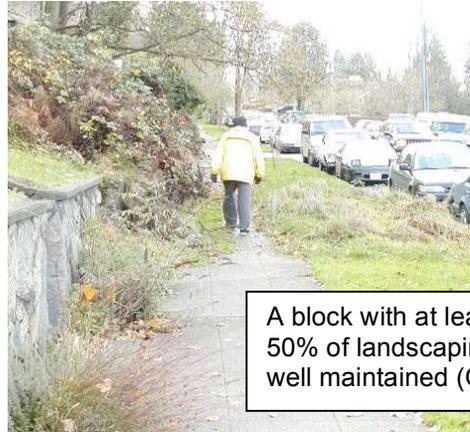


Private property Overgrowth (Q22)

Illustrations of Segment Observations



(Q44) Example of retrofitted pedestrian lampposts to provide ample lighting of walkways



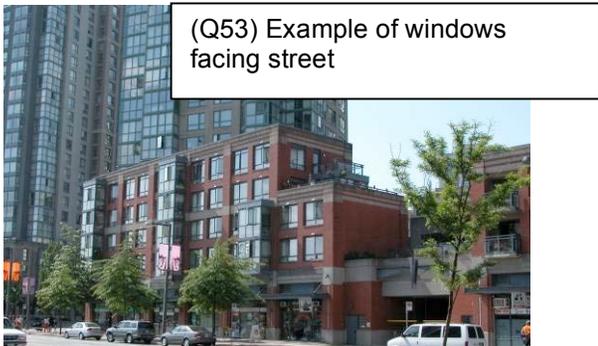
A block with at least 50% of landscaping well maintained (Q50)



(Q46A) Example of Street trees that offer shade



A block with less than 50% of landscaping well maintained (Q50)



(Q53) Example of windows facing street

This space reserved for additional illustrations as deemed helpful for training.

Guide to questions:

Audit Preparation Checklist

Questions	Subject Area
Heading, Q1	Data Collection
Q2-10	Land Use & Destinations
Q11-23	Walkways
Q24-37	Shoulders, Trails, Bicycle
Q38-46	Streetscape
Q47-55	Perception of Personal Safety and the Aesthetic Experience
Qi1-i8	Intersections

Necessary:

- Maps with segments and intersections clearly identified
- List of segments and intersections to audit
- Copies of Audit Tool
- Copies of Intersection Tool
- Clip board, note paper, pencil

Suggested:

- Traffic safety vest
- Tape measure
- Compass
- Comfortable clothes & shoes
- Water bottle and snacks
- Cellular phone
- City maps w/ street directory
- Sun protection & Hat
- Basic first aid kit
- No personal belongings
- Card or sheet w/ contact info for interested community members

Note:

After training is complete, the audit tool may be reproduced excluding pages i, ii & iii to reduce paper use.

Guidelines for Data Collection

Personal Safety:

- ✓ Conduct during daylight hours.
- ✓ Auditor pairs remain in eyesight of one another.
- ✓ If auditors feel threatened in any way, they should leave the area immediately and/or call police.
- ✓ If someone asks where you are from and you feel comfortable responding, please respond “*Healthy Aging Research Network and {local university}.*”
- ✓ If someone asks what you are doing, please respond “*we are collecting information about the community environment.*”
- ✓ If someone further asks why you are doing this, please respond “*to observe the characteristics of the environment that support or do not support community members’ physical activity.*”
- ✓ If someone continues to ask for more information, please respond “*for more information, you can call our project manager at {phone number}.*”

Street Safety:

- ✓ If there is no safe place to walk, conduct audit from inside a vehicle or choose a safe vantage point.
- ✓ If there is no path or sidewalk, walk on the verge or edge of the road (if minimal to no traffic).

PRC-HAN

Street Segment Audit Tool

Begin Here →

Date: _____ Day of Week: _____
Auditor: _____ City: _____
Street Name: _____ Segment ID: _____
Segment cross-streets: _____

Start Time: _____ : _____ AM/PM

1. How is audit information collected?

- Foot (walked segment)
- Auto (drove segment)
- Both (walked and drove segment)
- Bicycle (rode segment)
- Wheelchair or Assisted walking

PART I – LAND USE/DESTINATIONS

2. Construction Status

A. Construction Activity is In Progress

(construction materials, signs indicating construction or remodeling)

- None
- Residential buildings
- Non-residential buildings
- Streets
- Sidewalks
- Signs or pavement markings

B. New Construction Completed

(e.g., new trees, new buildings, fresh pavement, showing)

- No evidence of new construction
- Residential buildings
- Non-residential buildings
- Streets
- Sidewalks
- Signs or pavement markings

3. What is the predominant land use?

Check one or two as appropriate

- Residential buildings/yards
- Commercial buildings
- School/school yards
- Parking lots or garages
- Undeveloped land/vacant lot
- Designated green space/park
- Other non-residential

4. What parking facilities are present?

Select all that apply

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

5. How much spacing is visible between most of the buildings?

- No space between buildings
- A little (i.e., room to walk)
- Some (i.e., room to drive)
- A lot
- Not applicable

6. What types of residential uses?

Select all that apply

- Single family houses
- Multi-unit homes (duplex, 4-plex,)
- Apartments or condominiums
- Apartments above street retail
- Retirement/senior living facility
- Other (mobile home, dormitory)

7. Would you say this is a visually interesting street segment, or is it characterized by monotonous building design?

(Monotonous building design includes a strip mall, housing or office buildings that lack visual detail, or even those that seem excessively standardized, such as row of identical non-descript houses or one large office building.)

- Visually interesting
- In-between
- Monotonous
- Does not apply

8. Are residential and non-residential land-uses integrated?

Look at how space is used and the proportion of uses

- All non-residential
- Mostly non-residential
- Half non-residential, half residential
- Mostly residential
- All residential →(skip to Q11, p3)

9. How many non-residential buildings are adjacent to the sidewalk and street?

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

- No buildings are adjacent
- A few
- Some
- A lot or all are adjacent
- Does not apply

10. What is the total number of each of the following types of non-residential destinations?

Enter the total number of destinations of each type. Note: only count a business on one segment, even if it faces two streets.

Food-related destinations

- Fast food (national or local chain, primarily sells burgers, fried chicken, pizza, or “Americanized” Mexican, Chinese, etc.)
- Non-fast food restaurant
- Café or coffee shop
- Supermarket Grocery
- Small grocery/corner store/liquor
- Liquor store (primarily sells alcohol)
- Bar, tavern, or nightclub
- Convenience store with food (may or may not also be a gas station)
- Other food establishment or specialty shop (e.g., ice cream parlor, juice bar, donut shop)

Retail and service-related destinations

- Pharmacy or drug store
- Single or multi-vendor department or “big box” store (e.g., Home Depot, Best Buy, Sears, Super Walmart, Target)
- Strip mall or shopping center
- Auto (e.g., gas station with no convenience store, car repair, car wash)

- Bank or credit union
- Hotel or motel
- Newspaper stand/news rack or lockboxes
- Entertainment (e.g., movie theatre, arcade)
- Other service (e.g., beautician, lawyer, accountant, realtor, laundry/dry cleaner, commercial mailing service)
- Other retail (e.g., books, clothing, hardware, video rental)

Public, government, community destinations

- Health or social services (e.g., hospital, health department, community action agency)
- Public library
- Public post office
- Police or fire department
- School, college or university
- Utility company
- Transportation services (e.g., airport, train station, bus station)
- Art gallery or museum
- Senior center
- Other community center (non-recreational)
- Place of worship (e.g., church, synagogue, convent, mosque)
- Other public (e.g., cemetery, prison, media center)

Other destinations

- Office building
- Warehouse, factory or industrial building
- Other (specify): _____

Recreational facilities or destinations

- Private indoor fitness facility
- Community recreation center
- Community garden
- Park
- Playground at park or school
- Outdoor pool
- Golf course
- Sports/playing field or court (e.g., baseball or tennis at park or school)
- Sports track
- Other recreational facility (e.g., skating rink, miniature golf)

Undeveloped space/vacant buildings

- Empty store front for sale/lease
- Abandoned building
- Unmaintained lot or field
- Maintained green space (not a park or sports field, not a private yard)

PART II – WALKWAYS

Questions 11 through 37 require you to assess features for each side of the street. The top row relates to north and east sides; the bottom row is for recording data about south or west sides. If the segment runs at odd compass angle, establish which side you are referring to in the notes section on the last page.

11. Are sidewalks present?

N/E	<input type="checkbox"/> Yes	<input type="checkbox"/> No
S/W	<input type="checkbox"/> Yes	<input type="checkbox"/> No

No sidewalks either side? → skip to Q24.

Questions 12 through 23 relate to features of sidewalks.

12. Is there a buffer present?

(separation between the sidewalk and curb)

N/E	<input type="checkbox"/> Yes	<input type="checkbox"/> No
S/W	<input type="checkbox"/> Yes	<input type="checkbox"/> No

13. Sidewalks continuous within segment?

N/E	<input type="checkbox"/> Yes	<input type="checkbox"/> No
S/W	<input type="checkbox"/> Yes	<input type="checkbox"/> No

14. Are sidewalks continuous between the segments at one or both ends?

N/E	<input type="checkbox"/> Both	<input type="checkbox"/> One	<input type="checkbox"/> Neither
S/W	<input type="checkbox"/> Both	<input type="checkbox"/> One	<input type="checkbox"/> Neither

15. What is the width of the sidewalk?

N/E	<input type="checkbox"/> < 4 ft	<input type="checkbox"/> ≥ 4 ft	<input type="checkbox"/> Both
S/W	<input type="checkbox"/> < 4 ft	<input type="checkbox"/> ≥ 4 ft	<input type="checkbox"/> Both

16. Curb ramps, curb cuts, or mountable curbs connect at both ends of segment?

N/E	<input type="checkbox"/> Yes	<input type="checkbox"/> No
S/W	<input type="checkbox"/> Yes	<input type="checkbox"/> No

17. Poorly-maintained sections of the sidewalk constitute trip hazards?

(e.g., heaves, misalignment, cracks, weeds)

N/E	<input type="checkbox"/> None	<input type="checkbox"/> A few	<input type="checkbox"/> A lot
S/W	<input type="checkbox"/> None	<input type="checkbox"/> A few	<input type="checkbox"/> A lot

If none on both sides → skip to Q19.

18. Rate the extent of poor maintenance of the worst section of the sidewalk.

N/E	<input type="checkbox"/> Minor	<input type="checkbox"/> Moderate	<input type="checkbox"/> Major
S/W	<input type="checkbox"/> Minor	<input type="checkbox"/> Moderate	<input type="checkbox"/> Major

19. How steep is the sidewalk at the steepest point in the segment?

Rate the slope of the steepest part of the sidewalk in the segment by considering its impact on walking

N/E	<input type="checkbox"/> Level	<input type="checkbox"/> Moderate	<input type="checkbox"/> Steep
S/W	<input type="checkbox"/> Level	<input type="checkbox"/> Moderate	<input type="checkbox"/> Steep

20. Does the sidewalk have a cross-slope that affects walkers?

A cross-slope is a sideways slope, like a driveway that slopes through the sidewalk. Only evaluate cross-slope that is in the path of the walkway.

N/E	<input type="checkbox"/> Level	<input type="checkbox"/> Sloped	<input type="checkbox"/> Steep
S/W	<input type="checkbox"/> Level	<input type="checkbox"/> Sloped	<input type="checkbox"/> Steep

21. Permanent obstructions in sidewalk?

(e.g., telephone poles, trees) Only include obstructions if they narrow the walkway to less than four feet. Do not count items in the buffer zone between sidewalk and curb.

N/E	<input type="checkbox"/> None	<input type="checkbox"/> Some	<input type="checkbox"/> Many
S/W	<input type="checkbox"/> None	<input type="checkbox"/> Some	<input type="checkbox"/> Many

22. Temporary obstructions in sidewalk?

(e.g., sandwich board signs, private property overgrowth, parked cars, clippings, dumpsters)

N/E	<input type="checkbox"/> None	<input type="checkbox"/> Some	<input type="checkbox"/> Many
S/W	<input type="checkbox"/> None	<input type="checkbox"/> Some	<input type="checkbox"/> Many

23. Sidewalk slipping hazard?

(e.g., slick surface, loose gravel, wet leaves, etc.)

N/E	<input type="checkbox"/> None	<input type="checkbox"/> Some	<input type="checkbox"/> Severe
S/W	<input type="checkbox"/> None	<input type="checkbox"/> Some	<input type="checkbox"/> Severe

24. Is there a white stripe at the edge of the road, with a shoulder? What is the width of the shoulder next to the stripe?

N/E	<input type="checkbox"/> None <input type="checkbox"/> < 4 ft <input type="checkbox"/> ≥ 4 ft <input type="checkbox"/> Delineated Parking only
S/W	<input type="checkbox"/> None <input type="checkbox"/> < 4 ft <input type="checkbox"/> ≥ 4 ft <input type="checkbox"/> Delineated Parking only

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

- Unpaved pathway (goat path)
- Street shoulder, if safe
- In Street (low speed traffic)
- Other, Specify: _____
- No other safe place to walk

26. Is there a marked bicycle lane?

- Yes No

If no → skip to Q28.

27. Is the bicycle lane continuous between the segments at both ends?

N/E	<input type="checkbox"/> Yes <input type="checkbox"/> No
S/W	<input type="checkbox"/> Yes <input type="checkbox"/> No

28. Is there an off-road trail (for walking or biking) that has been paved or leveled?

N/E	<input type="checkbox"/> Yes <input type="checkbox"/> No
S/W	<input type="checkbox"/> Yes <input type="checkbox"/> No

If “no” on both sides → skip to Q38.

PART III – TRAIL

If the trail is on one side of the street only, then only enter data for these items for that side – leave other side answers blank.

29. Where is the trail?

N/E	<input type="checkbox"/> Along road <input type="checkbox"/> Along sidewalk <input type="checkbox"/> Other _____
S/W	<input type="checkbox"/> Along road <input type="checkbox"/> Along sidewalk <input type="checkbox"/> Other _____

30. What is the width of the trail?

North/East	South/West
<input type="checkbox"/> < 4 feet	<input type="checkbox"/> < 4 feet
<input type="checkbox"/> ≥ 4 feet	<input type="checkbox"/> ≥ 4 feet
<input type="checkbox"/> ≥ 10 feet	<input type="checkbox"/> ≥ 10 feet
<input type="checkbox"/> Both	<input type="checkbox"/> Both

31. Is the trail marked for multi-use?

N/E	<input type="checkbox"/> Yes <input type="checkbox"/> No
S/W	<input type="checkbox"/> Yes <input type="checkbox"/> No

32. Does the trail have poorly maintained sections?

(e.g., heaves, misalignment, cracks, weeds)

N/E	<input type="checkbox"/> None <input type="checkbox"/> A few <input type="checkbox"/> A lot
S/W	<input type="checkbox"/> None <input type="checkbox"/> A few <input type="checkbox"/> A lot

33. Rate the extent of poor maintenance of the worst section of the trail:

N/E	<input type="checkbox"/> Minor <input type="checkbox"/> Moderate <input type="checkbox"/> Major
S/W	<input type="checkbox"/> Minor <input type="checkbox"/> Moderate <input type="checkbox"/> Major

34. Permanent obstructions on trail?

(e.g., telephone poles, trees)

N/E	<input type="checkbox"/> None <input type="checkbox"/> A few <input type="checkbox"/> A lot
S/W	<input type="checkbox"/> None <input type="checkbox"/> A few <input type="checkbox"/> A lot

35. Temporary obstructions on trail?

(e.g., trash cans, sandwich board signs, overgrowth)

N/E	<input type="checkbox"/> None <input type="checkbox"/> A few <input type="checkbox"/> A lot
S/W	<input type="checkbox"/> None <input type="checkbox"/> A few <input type="checkbox"/> A lot

36. Does the trail have a slope that affects walkers?

N/E	<input type="checkbox"/> Level <input type="checkbox"/> Moderate <input type="checkbox"/> Steep
S/W	<input type="checkbox"/> Level <input type="checkbox"/> Moderate <input type="checkbox"/> Steep

37. Please indicate the trail surface:

Please check all that apply

North/East	South/West
<input type="checkbox"/> Dirt	<input type="checkbox"/> Dirt
<input type="checkbox"/> Gravel	<input type="checkbox"/> Gravel
<input type="checkbox"/> Asphalt	<input type="checkbox"/> Asphalt
<input type="checkbox"/> Concrete	<input type="checkbox"/> Concrete
<input type="checkbox"/> Stone	<input type="checkbox"/> Stone
<input type="checkbox"/> Other	<input type="checkbox"/> Other



Illustration of multi-use trail markings (Q31)

PART IV – STREETSCAPE

Questions 38 through 55 require you to assess features for the entire street segment. Combine observations for both sides of the street into a single evaluation.

38. Is there a public transit stop on this segment?

- None
- Bus stop
- Light Rail/Other Transit
- Multiple Transit Stops
- Senior transit/paratransit

If none → skip to 40.

39. Is there a bench or covered shelter at the transit stop?

- None
- Bench
- Covered shelter
- Both

40. What type of street is present?

- Divided highway ≥ 4 lanes
- Undivided ≥ 4 lanes
- 3 lanes (or two plus center turn lane)
- 2 marked lanes
- No marked lanes

41. Rate the observed traffic volume.

- Light
- Moderate
- Heavy

42. Is there a posted speed limit?

- Yes Enter:
- Yes, special zone (e.g. school zone) Enter:
- None posted

43. What other street characteristics are present? Check all that apply

- Cul-de-sac
- Traffic calming devices (e.g., speed bumps, speed humps, chicanes or other devices to reduce volume or speed)
- Roll-over Curbs
- Drainage ditches
- Directional signs for pedestrians
- Crosswalk, “Yield to Pedestrian”, or “Share-the-Road” type signage

44. Are street lights installed?

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

45.A How many driveways or alleys are there on both sides?

- None 1 or 2
- 3 to 5 6 or more

45.B. If driveway or alley present, estimate how often on this block vehicles enter or leave driveways or alleys?

- 0-2 times per day
- 1-2 times in an hour
- 1-2 times in ten minutes
- 1 or more times per minute

46. Presence of Street Amenities

A. Street trees that offer shade?

- Present None present

B. Trash bins?

- Present None present

C. Benches or other places to sit?

- Present None present

D. Bicycle racks?

- Present None present

E. Working drinking fountains?

- Present None Present

F. Working public telephones?

- Present None present

G. Available public restrooms?

(do not include those inside private businesses)

- Present None present

PART V – AESTHETIC & SOCIAL

47. Do you observe pleasant features?

(e.g., fountains, vegetation, gardens, etc.)

- Yes No

48. Are there historical, cultural or artistic features (e.g., statues, murals)?

- Yes No

49. Are at least 75% of the buildings well maintained?

- Yes No N/A

50. Is at least 50% of the landscaping well maintained?

- Yes No N/A

51. Which of the following items are present? *Check all that apply*

- Graffiti or tagging (not murals)
- Abandoned cars
- Buildings with broken or boarded windows
- Drug paraphernalia
- Broken glass
- Beer/liquor bottles/cans
- Litter in yards
- Litter in street/sidewalk

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

- None
- A little concentrated in 1-2 areas
- A lot concentrated in 1-2 areas
- A little that is widespread
- A lot that is widespread

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

- None
- A little
- Some
- A lot

53. What opportunities exist for people to be seen when walking if they are in need?

- Windows facing street
- Porches or places for sitting in front of homes or businesses
- Other _____
- None

54. Which of the following applies to the people outdoors visible in the segment?

People Present <i>Check all that apply</i>	None	Children	Teens	Adults	Older Adults
a) Sitting/standing <i>(waiting for bus, sitting on patio)</i>	<input type="checkbox"/>				
b) Walking	<input type="checkbox"/>				
c) On Street Bicycling	<input type="checkbox"/>				
d) Jogging	<input type="checkbox"/>				
e) Competing use of walkways: <i>(Skateboarding, Bicycling, etc.)</i>	<input type="checkbox"/>				
f) Other active behaviors <i>(gardening, playing, sports)</i>	<input type="checkbox"/>				
g) Talking or Greeting	<input type="checkbox"/>				

55. What else did you observe?

Check all that apply

- Air pollutants (e.g., diesel fumes, factory emissions)
- Heavy Vehicle Traffic
- High speed traffic
(Speeds of 40 MPH or greater)
- Loud ambient sounds (e.g., trains, construction, factories, aircraft)
- Highway nearby
- Railroad tracks
- Large bodies of water (e.g., river, lake)
- Unfavorable weather (e.g., rain)
- Aggressive drivers

Record Time for Completion of Data Collection for this Segment:

Stop Time: _____ : _____ AM/PM

Notes/Comments:

PRC-HAN

Intersection Audit Protocol

Intersection Audit Instructions:

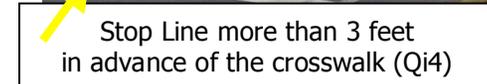
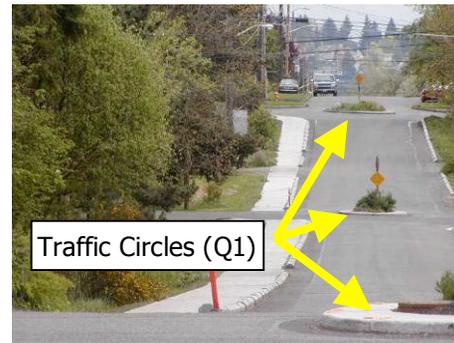
INTRODUCTION: Intersections present some of the greatest obstacles to pedestrian activity. There are many levels of intersection complexity, and this tool includes all of the elements for even a very complex intersection. This tool helps to describe an intersection and audit characteristics to recommend for possible improvements.

IDENTIFICATION: Each intersection should have a unique identification label to enter in the tool along with names of the cross streets. Data managers link the intersection and street segment data based on the identification labels.

INSTRUCTIONS: Each intersection requires a single audit sheet. Problems specific to one leg of the intersection should be noted in the *INTERSECTION NOTES* on the next page.

Use the intersection audit tool only to assess the area defined by crossings between/among segments that connect to the intersection. Use individual segment audit forms to assess each of the segments that connect with the intersection.

Illustrations of Intersection Observations



Special Conditions for Training:

Intersection Geometry - Distance (Qi6b)

Count the number of marked lanes on the widest crossing, as delineated by the street's centerline and any individual lane markings. For example, in the four cases depicted in the illustrations on this page, one would record Top Left=1; Middle Left=2; Top Right=4; Bottom Right (directly above)=2.

PRC-HAN



Date: _____ Day of Week: _____

Auditor: _____ City: _____

Adjacent Segment ID: _____ Intersection ID: _____

Intersecting street names: _____

Intersection Audit Tool

PART I – TRAFFIC CONTROL

i1. Intersection Control:

Check items present

- None
- ▼ Yield signs/Flashing yellow
- Stop signs/Flashing red light
- 🚦 Traffic signal
(if no signal → skip to Qi3)
- Traffic circle, Roundabout

i2. Signalization (if traffic signal present):

Check all that apply

- Do any of the traffic signals have green arrows for dedicated vehicle turns?
- 🚶 Pedestrian “Walk” signals present
 - Pedestrian push buttons present?
 - Countdown signal?
 - Audible walk signal?

Record the crossing time for pedestrians at the leg of the intersection allowing the **shortest** amount of time to cross.
(Length includes white “walk” time)

(🚶) plus flashing “don’t walk” time (🚦)

>> seconds

- Check if it appears to you that this time is inadequate for slower walkers to cross.

PART II – FACILITIES & CONDITIONS

i3. ADA Compliance/Accessible Design

a. Curb Ramps:

- All corners some corners none
- Curb ramp does not line up with crossing
(even if there is no marked crosswalk, there is still a crossing)
- Poor condition of curb ramps
- Drainage or puddle problems
- Permanent obstructions that narrow passages to less than 3 feet wide

b. Other characteristics or features:

- Steep slope or cross-slope at the intersection
- Temporary obstructions
(e.g., sandwich board signs, construction)
- Map or Informational kiosk posted
- Large print street name signs

i4. Crosswalk Treatments:

- Marked crosswalk
- High-visibility striping (Illustration)
- Stop lines at least 3 feet before crosswalk (Illustrations)
- Additional crosswalk warnings
- Raised crosswalk

i5. Vehicular Traffic/Driver Behavior:

- Traffic: Light Medium Heavy
- Fast turning traffic
 - Drivers failing to yield to pedestrians
 - Cars parked too close to intersection
 - Drivers stopping in the crosswalk

i6. Intersection Geometry

a. Number of legs intersecting: check one

- T-intersection 4-way intersection
- 5-way star 6-way (e.g., three streets)

b. Distance: Widest leg is _____ lanes wide

c. Features: Check all that are present

Specially identified lanes:

- Right Turn Left Turn
- Refuge islands
- Center Median Strip
- One-way streets
- Especially wide lanes
- Curb extension (“bulbout”)
- Angled intersection (any streets not at 90°)

7. Miscellaneous Problems

- No lampposts or overhead street lamps
- Poor condition of crossing surface
- Poor visibility at corners
- Faded or worn crosswalk markings
- Missing or faded street signs
- Other - describe: _____

i8. Intersection Notes:

<p>Intersection observations completed at:</p> <p>Time: _____ : _____ AM/PM</p>
--