

DEVELOPING A **PRACTICAL PROTOCOL** TO DIAGNOSE A NEIGHBORHOOD ENVIRONMENT **FOR HEALTHY COMMUNITY**



**EUN JUNG KIM &
JAE CHEOL KIM
2015. 2. 25**

PRESENTATION ORDER

- I. Background & Objectives**
- II. Limitations of Existing Approaches to Healthy Environments**
- III. A Procedural Approach as An Alternative**
- IV. Developing ENAP (Enhanced Neighborhood Analysis Protocol)**
- V. How to Use the Protocol: Demonstration Case Study**
- VI. Conclusions**

I. Background & Objectives

- The main objective of the study is **to develop a practical and strategic tool to promote healthy communities** and demonstrate its potentials through an example case study.
- The importance of the connection between Environment and health has been acknowledged in literature and become popular as a political propaganda.
- Now, it is the time to move on to the next step. That is, researchers should focus more on actually how to promote healthy communities in the real world.

II. Limitations of Existing Approaches

- Literature focusing on verifying and demonstrating the influence of the environment on human health
- Approaches focusing on regional scale
- Few practical approaches looking for the way to build a healthy environment

E.g. SNAP (Smart or Sustainable Neighborhood Analysis Protocol)

→ **Need for an enhanced procedural approach for real world improvement**

III. Procedural Approach as an Alternative

Characteristics of the Procedural Approach Proposed in this study

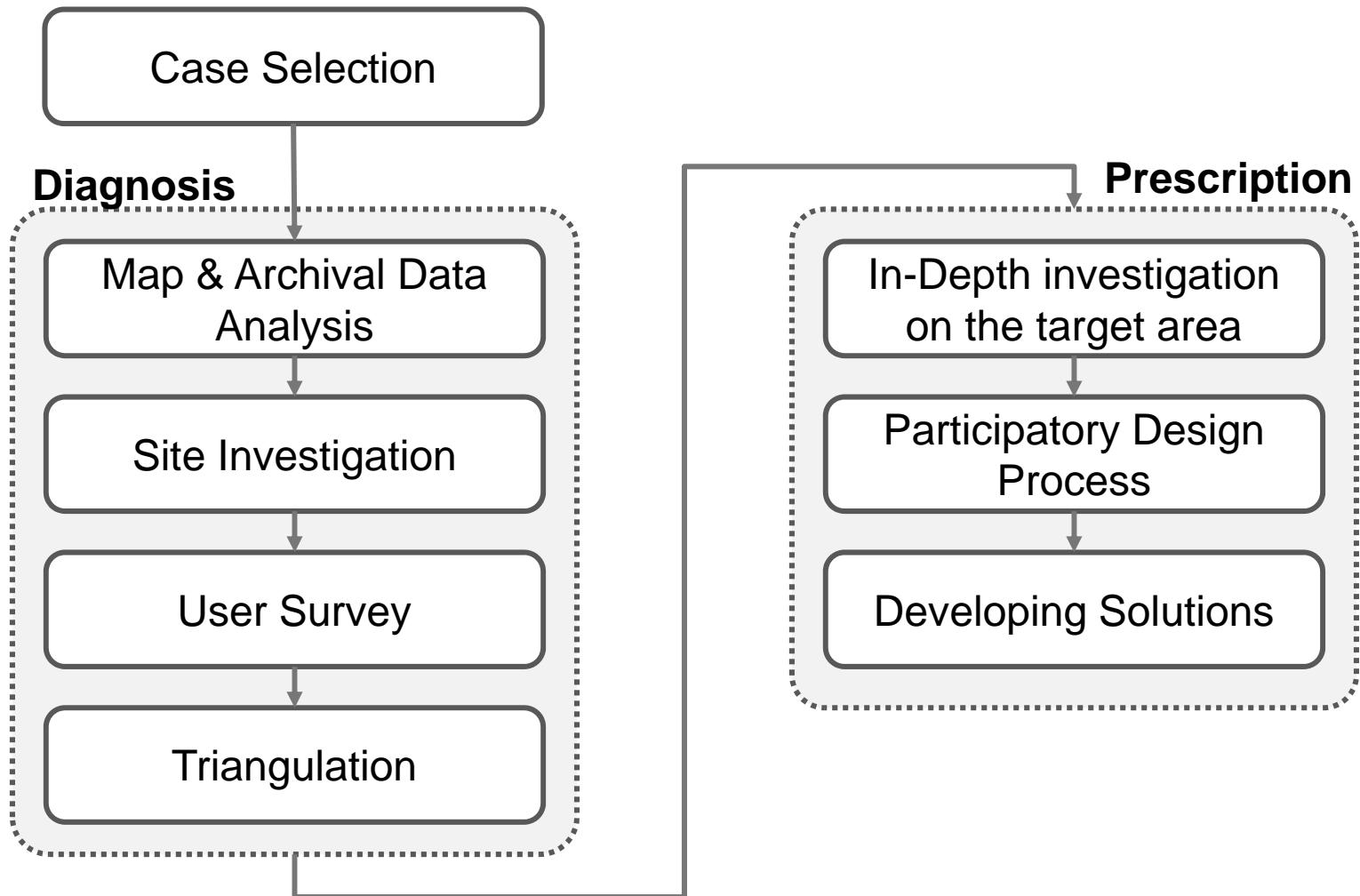
- Triangulation of data sources and research methods
- The mixture of qualitative and quantitative approaches
- Synthesis of global & local knowledge
- An effective way of community participation
- Standardized & context-sensitive procedure (or protocol)

IV. Developing ENAP

- Developed a standardized and context-sensitive protocol that
 - 1) articulates the triangulation of multiple data types, sources and research methods;
 - 2) synthesizes global and local knowledge
 - 3) improve the efficiency of community participation
- In other words, questions that the study intended to address are practical ones, such as “Which places need improvement most urgently?” and “What should be improved?” rather than questions asking meaningless rankings like “Which city is the most healthy one?”

IV. Developing ENAP

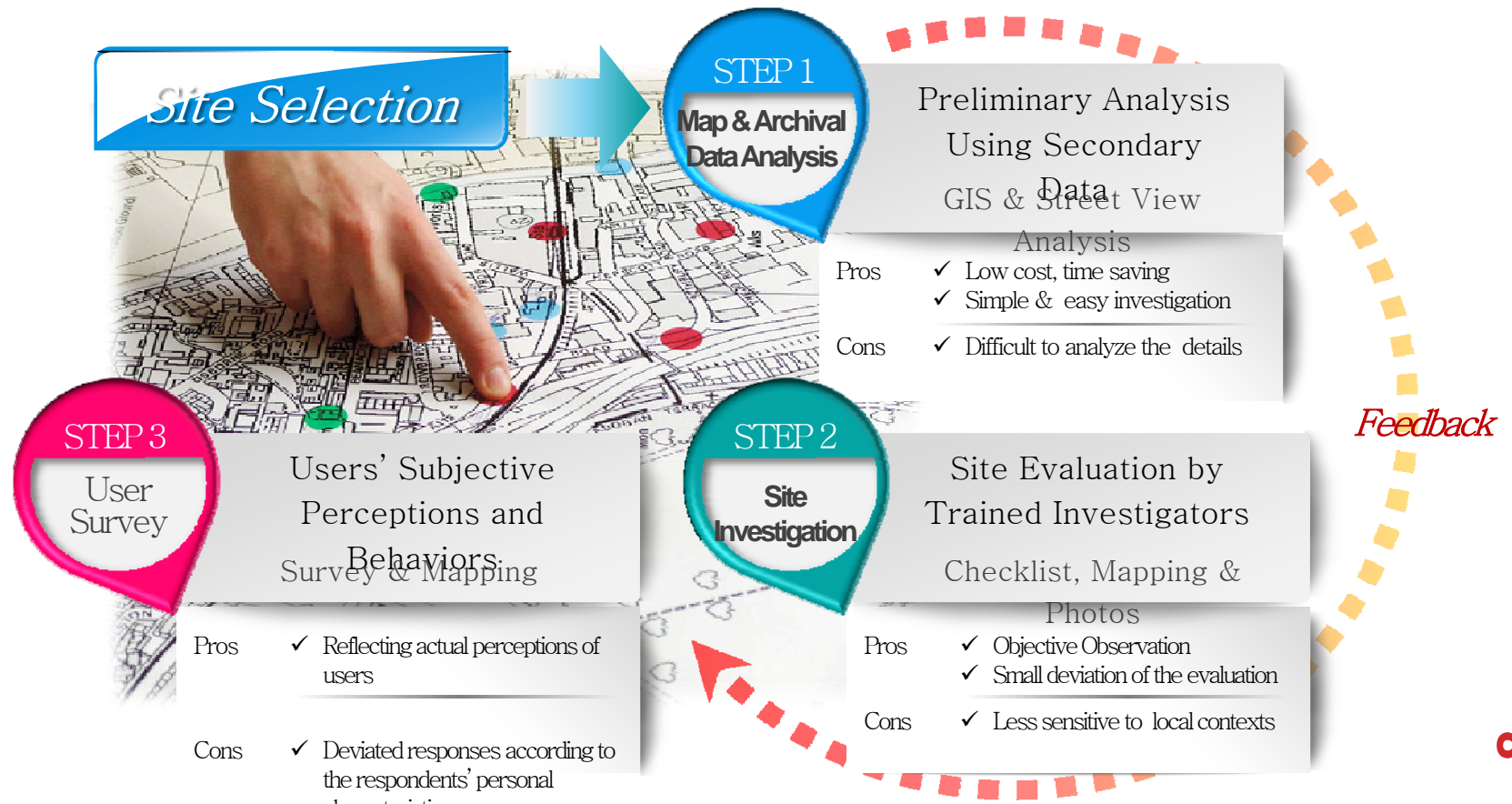
ENAP Flow



V. How to Use the ENAP: Case Study

ENAP Flow (Diagnosis)

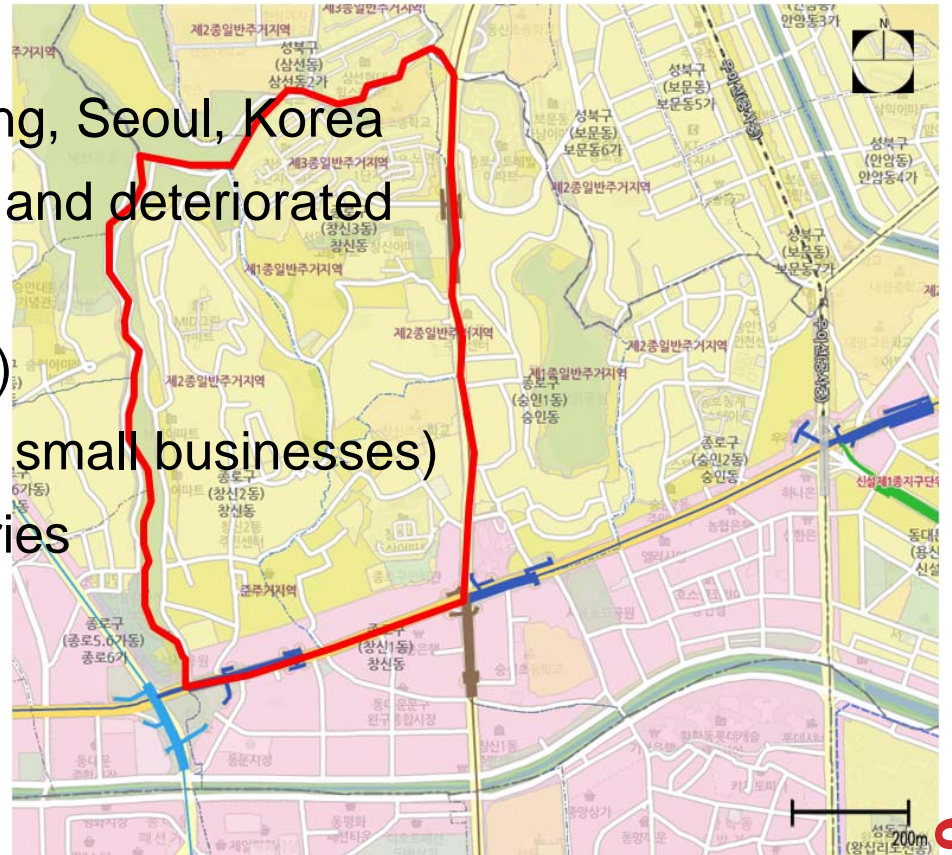
- Site Selection → Map & Archival Data Analysis → Site Investigation → User Survey



V. How to Use the ENAP: Case Study

Case Selection

- Selected an area whose urban structure is a representative one of the municipality to which it belong
- Selected Case: Changsin-dong, Seoul, Korea
 - A spontaneously formed, and deteriorated neighborhood
 - 0.6km x 1km (600,000m²)
 - Mixed uses (residential & small businesses)
 - Many small sewing factories
 - Sloped topography



V. How to Use the ENAP: Case Study

Map & Archival Data Analysis

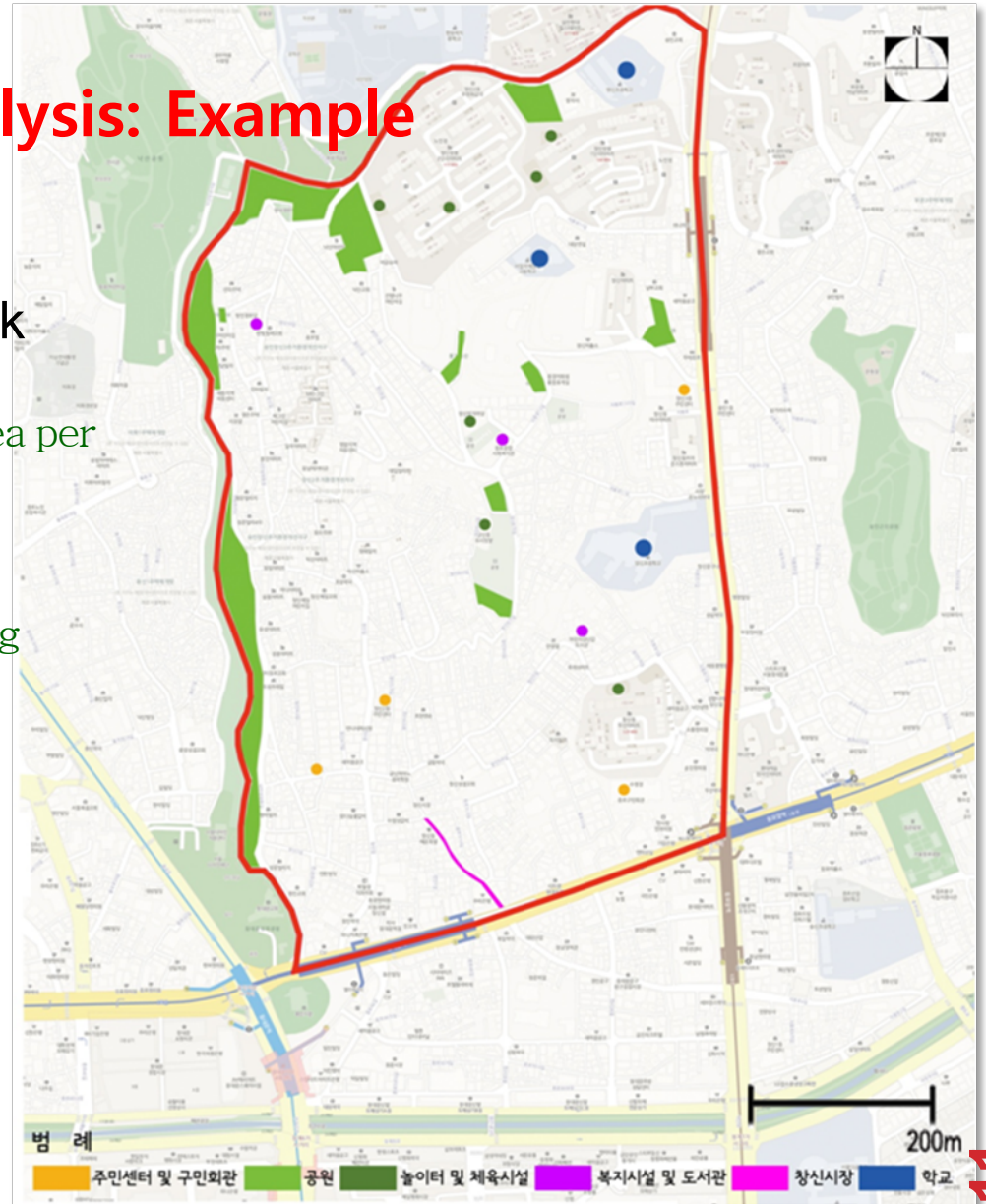
- Preliminary Investigation to prepare the site investigation and user survey; Supplementary data to interpret the results of the latter
- Typical resources: base maps (online map services, GIS or CAD maps)

Goals	Sub goals or Strategies	Analysis Details
Active Ling	More mixed uses to promote walk	- Distributions of facilities for most users (e.g., parks, waterfronts) & facilities for specific users (e.g., schools)
	Better pedestrian & bike connectivity	- Distribution of facilities facilitating walking & biking (e.g., pedestrian malls, bike roads & bike parking facilities)
	Better public transit	- Locations and service levels of public transit, types and numbers of civil complaints related with public transit
	Less traffic inducing facilities	- Locations and number of big box stores
Safety	Crime safety	- Locations of CCTV; Types and number of civil complaints related with crime safety
	Road traffic safety	- Number of lanes, average vehicle speed, intervals of crosswalk, traffic accident database
	Food safety	- Locations and number of organic food stores
Equity	Spatial distribution of public services	- Types, locations and number of facilities for the disabled or elderly
Comfort	Noise, lighting, air & water pollution	- Distribution of polluters (noise, water & air pollution), civil complaint data related with various pollutions
	Sun light & Ventilation	- Building heights & street widths, Civil complaint data related with sun light or ventilation

V. How to Use the ENAP: Case Study

Map & Archival Data Analysis: Example

- Example : Analysis of the facilities promote travel walk
- ✓ 10 community parks (26,822m², park area per person 1.2m²)
- ✓ 4 play grounds,
- ✓ 3 schools
- ✓ A stream and local market within walking distance from the site



V. How to Use the ENAP: Case Study

Site Investigation

- With a prepared investigation instruction
- Objective measuring & Subjective evaluation
- By trained investigators

Goals	Sub goals or Strategies	Investigation Items
Active Living	More mixed uses to promote walk	- Distribution of street front shops
	Better pedestrian & bike connectivity	- Level of pedestrian disconnection, paving status of pedestrian & bike roads,, width of sidewalks, overall convenience level of pedestrian and bike roads
Safety	Crime Safety	- Pedestrian traffic volume, facilities for crime safety, overall crime safety level
	Road traffic safety	- Vehicle traffic volume, interferences between pedestrian and automobile traffics, perceived car speed, facilities for road safety, overall road safety of the area
Equity	Universal Design	- Overall mobility level and places inconvenient particularly for wheelchairs or strollers
Comfort	Noise, lighting, air & water pollution	- Level of noises, smell , and sanitation
	Public Design	- Messy and disordered streetscapes
	Green landscape	- Visual exposure to green space
Community	Neighborhood identity & Social activities	- Number of neighborhood places where people take rest, communicate with each other

V. How to Use the ENAP: Case Study

Site Investigation

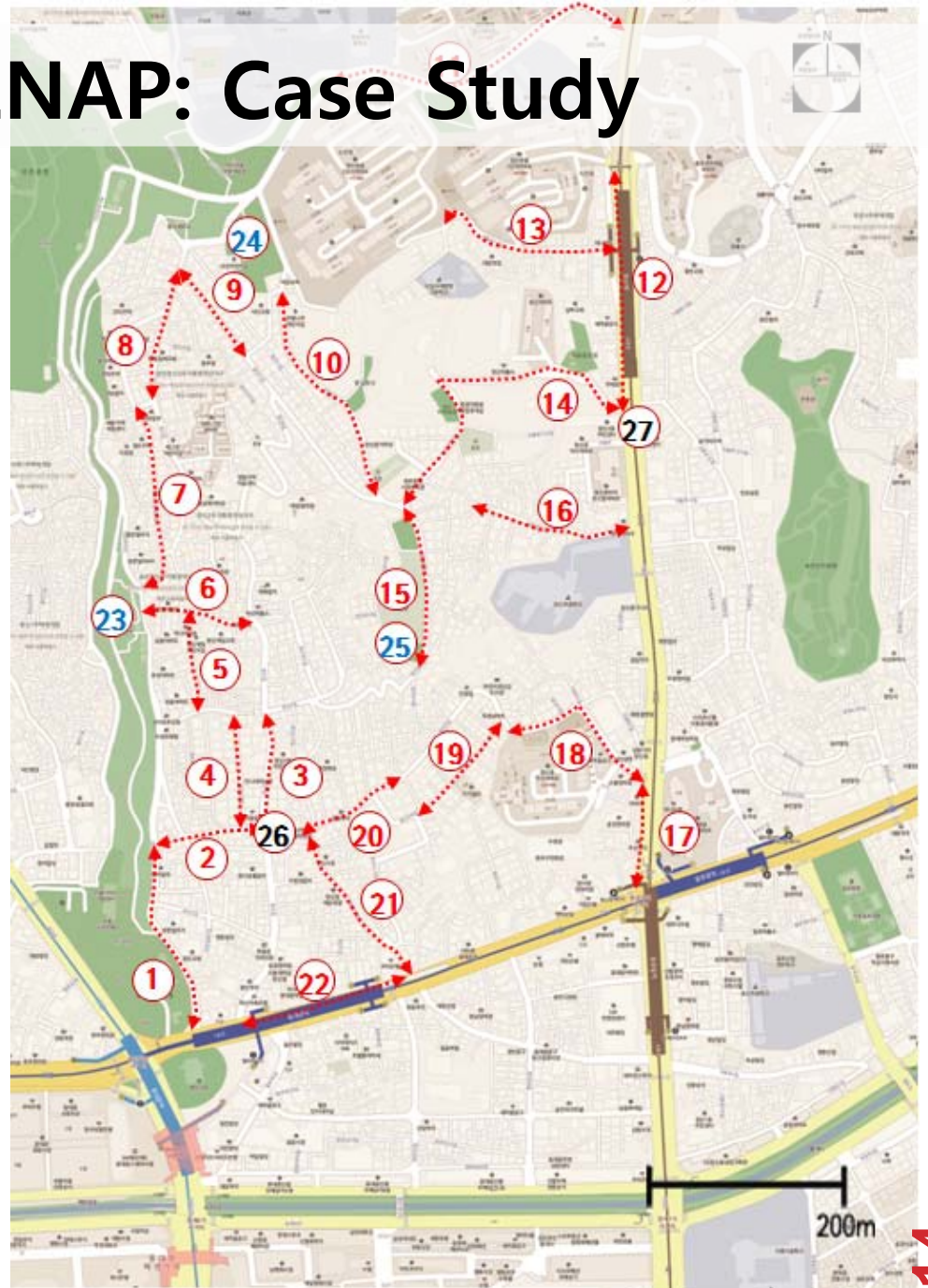
- Standardized Protocol
 - ✓ Schedule
 - ✓ Routes
 - ✓ Checklists

일시	시간	창신동	서촌
2014.9.29 (월)	13:30 - 14:30	중곡역 스타벅스 미팅 (현장조사 관련 사전 교육) 조사원 : 이연수, 조동현, 권장은	조사원 : 박필재, 장영호, 김한별
	14:30 - 15:00	창신동으로 이동 (중곡역 -> 동대문역)	서촌으로 이동 (중곡역 -> 경복궁역)
	15:00 - 18:30	주간 조사	주간 조사
	18:30 - 20:00	저녁 및 휴식	저녁 및 휴식
	20:00 - 23:00	야간 조사	야간 조사
	23:00	조사지 제출 및 귀가	조사지 제출 및 귀가
현장 조사 사진	 <p>〈지붕로 교통량 측정 모습〉</p>		
	 <p>〈루트 이동 모습〉</p>		

V. How to Use the ENAP: Case Study

Site Investigation

- Standardized Protocol
 - ✓ Schedule
 - ✓ Routes
 - ✓ Checklists



V. How to Use the ENAP: Case Study

Site Investigation

- Standardized Protocol

- ✓ Schedule

- ✓ Routes

- ✓ Checklists

with samples



1) Date: 2014-04-25 2) Time: Day : Night : 3) Location: 4) Investigator:

(1. Very Bad / 2. Bad / Neutral / 4. Good / 5. Very Good)

1. Active Living		Route 1	Route 2	Route 3	Etc.
① Ratio of street front retails ① (0-20%), ② (20-40%), ③ (40-60%), ④ (60-80%), ⑤ (80-100%)		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	Photo
② Level of Pedestrian Disconnection (The degree that pedestrians are disturbed by driveway or high curb stones)		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	
③ Pavement quality of pedestrian or bike paths		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	
④ Sidewalk width ① ~ 0.5m ② 0.5~1.5m, ③ 1.5~2.5m, ④ 1.5~2.5m, ⑤ 2.5m ~		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	
⑤ Overall convenience level of pedestrian and bike paths		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	
2. Safety		Route 1	Route 2	Route 3	Etc.
① Pedestrian Traffic Volume (number of people per 5 min.)	Day	persons/5min.	persons/5min.	persons/5min.	Mapping
	Night	persons/5min.	persons/5min.	persons/5min.	
② Facilities or devices for crime safety (CCTV, guard posts)	CCTV:				Mapping
	guard posts:				
③ Overall perceived crime safety	Day	① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	
	Night	① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	
④ Vehicle traffic volume		vehicles/5min.	vehicles/5min.	vehicles/5min.	
⑤ Interference between pedestrians and automobiles		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	
⑥ Perceived vehicle speed ① very fast, ② fast, ③ neutral, ④ slow, ⑤ very slow		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	
⑦ Facilities for road safety (CCTV, humps)	CCTV:				Mapping
	humps:				
⑧ Overall perceived road safety		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	
3. Equity		Route 1	Route 2	Route 3	Etc.
① Mobility for wheel chairs & strollers (High curb stones, pavement quality)		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	
② Obstacles against wheel chairs & strollers (humps, pavement quality, vehicle interference) * counting, mapping, photographing	curbs:				Mapping Photo
	pavement:				
	sidewalk width:				
	car interference:				
	etc.:				
4. Comfort		Route 1	Route 2	Route 3	Etc.
① Noise level (dB)		dB	dB	dB	
② Odor (waste, polluted water or exhaust gas)		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	
③ Management (waste, cleaning condition)		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	Photo
④ Messy and disordered landscape (Sign boards, stallholders, facades)		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	Photo
⑤ Visually accessible green		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	
5. Community		Route 1	Route 2	Route 3	Etc.
① Quality of the place for communal activities		① ② ③ ④ ⑤	① ② ③ ④ ⑤	① ② ③ ④ ⑤	Mapping Photo
② Number of places for community activities (e.g., benches, cafes, pavilions)					

V. How to Use the ENAP: Case Study

Site Investigation

- Analysis Example: Crime Safety



V. How to Use the ENAP: Case Study

User Survey

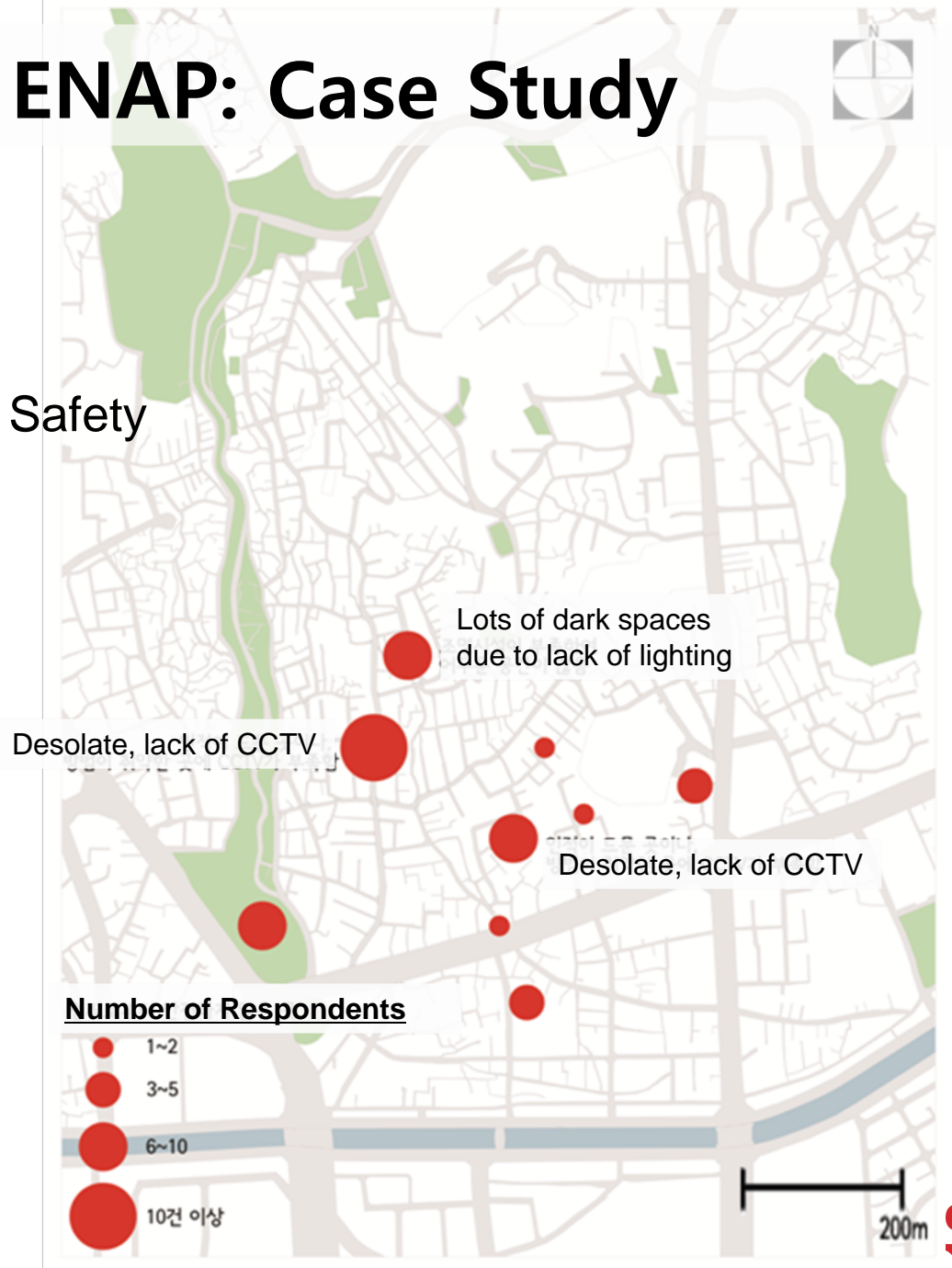
- Users' subjective evaluation about the overall quality of the area
- Mapping problematic places

Goals	Sub goals or Strategies	Survey Contents
Active Living	More mixed uses to promote walk	- Mapping places where they frequently visit on foot or bike
	Better pedestrian & bike connectivity	- Evaluating the quality of pedestrian or bike routes
Safety	Crime Safety	- Evaluating overall perceived crime safety of the neighborhood - Mapping the most dangerous places for crime
	Road traffic safety	- Evaluating overall perceived road safety of the neighborhood - Mapping the most dangerous places for car accidents
Equity	Universal Design	- Evaluating overall quality of the neighborhood for the disabled and elderly
Comfort	Noise, lighting, air & water pollution/	- Evaluating overall comfort level of their neighborhood - Mapping the most uncomfortable places
Community	Neighborhood identity & Social activities	- Mapping the places that they have an attachment - Mapping the places where they meet with their neighbors

V. How to Use the ENAP: Case Study

User Survey

- Example Analysis: Crime Safety



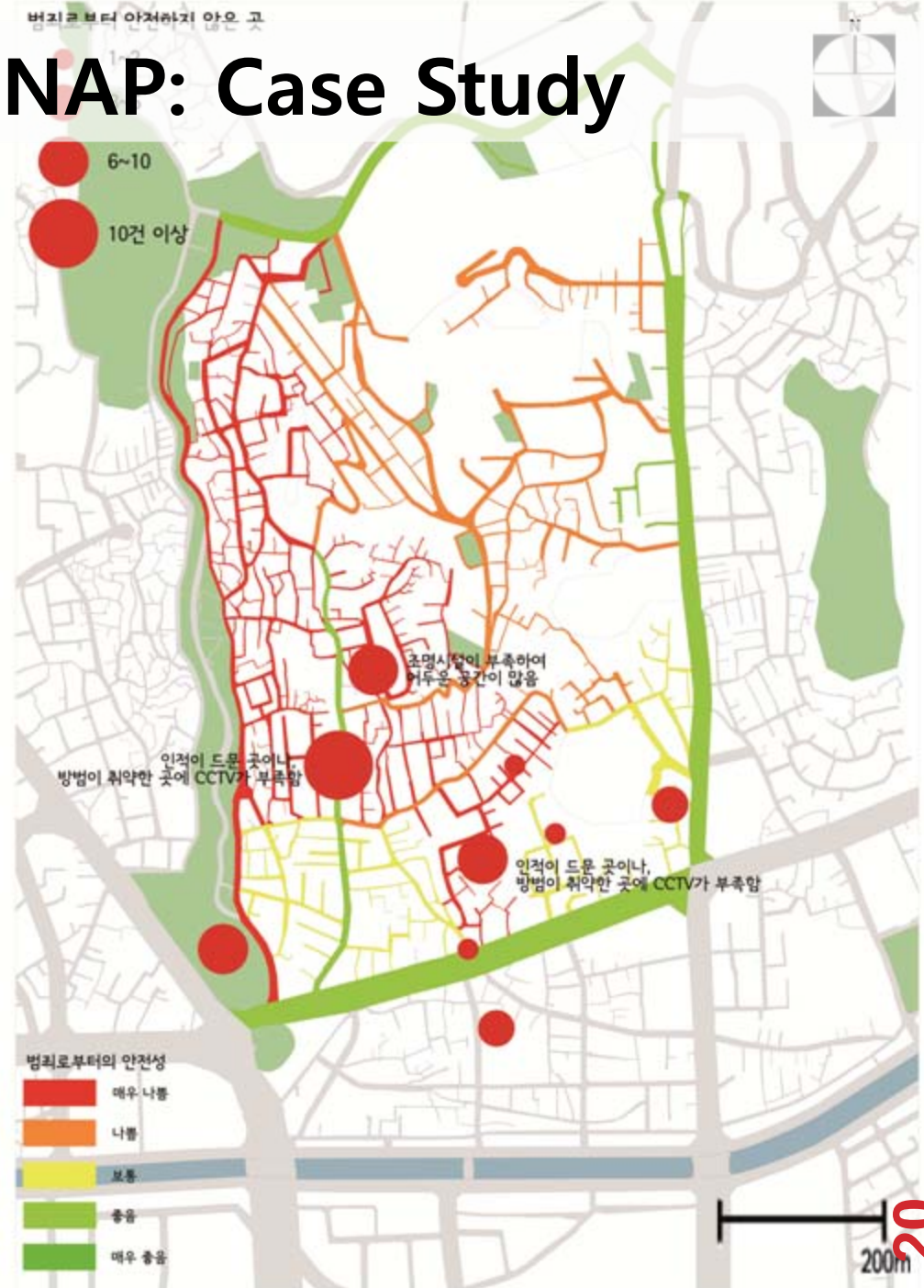
V. How to Use the ENAP: Case Study

Triangulation: Locating Problematic Places

- First, identify the places where both users and trained investigators marked as a problematic place
- Second, conduct site investigation again for the places where users marked as a problematic place but trained investigators did not
- Third, conduct additional user interview for the places where trained investigators marked as a problematic place but users did not
- According to the results from above triangulation, set up the priorities of the places for improvement

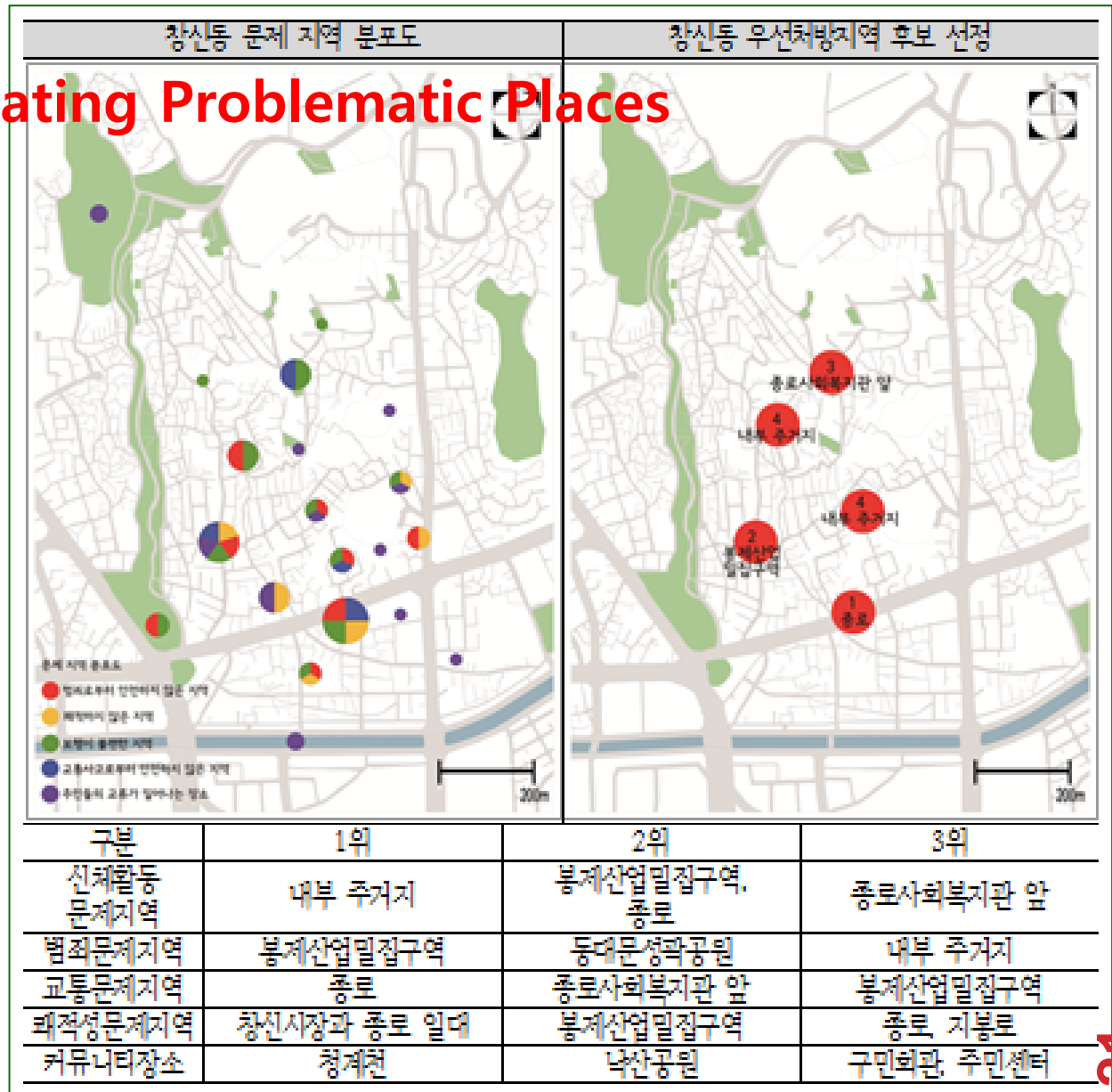
V. How to Use the ENAP: Case Study

Triangulation



V. How to Use the ENAP: Case Study

Triangulation: Locating Problematic Places



V. How to Use the ENAP: Case Study

In-Depth Investigation of the Target Areas

- Summarize the results of the 1st Investigation (map & archival data analysis, site investigation & user survey)
- Conduct the in-depth investigation focusing on the target areas:
Diversify investigation times and tools

1. Video recording	2. User interview
<ul style="list-style-type: none">• 1 investigator• 30 minutes * 3 ~ 5 times / day (morning; afternoon; evening; late night)• The most critical spot of the area	<ul style="list-style-type: none">• 2 interviewers• Interviewees: visitors, residents & shop owners
3. Counting vehicle & pedestrian volume	4. Detailed field observation
<ul style="list-style-type: none">• 5 minutes * 3 ~ 5 times / day (morning; afternoon; evening; late night)• Use hand counters	<ul style="list-style-type: none">• Measure of noise• Location of street furniture

V. How to Use the ENAP: Case Study

In-Depth Investigation of the Target Areas

- **Video Recording**
 - ✓ Where? → the most important spot
 - ✓ For what? → to observe behaviors in the passage of time and interactions between different actors (e.g., cars vs. pedestrians)
 - ✓ Other uses? → As a part of interviews



V. How to Use the ENAP: Case Study

In-Depth Investigation of the Target Areas

- **Structured User Interviews**

- ✓ Whom? → Users of the target area (residents; shop owners; visitors)
- ✓ Questions → general information of interviewees; their subjective evaluation on the environmental quality of the target area; their behavioral patterns of visiting and utilizing the area

Classification	Contents
Interviewee's Characteristics	<ul style="list-style-type: none">• Classification: Residents, Shop owners, Visitors• Familiarity with the target area• Demographic info. (age, profession, sex and family composition)• Everyday life pattern (weekday/weekend)
Environment Quality of the Target Area	<ul style="list-style-type: none">• Interviewee's overall evaluation on the target area (1. evaluation 2. major influencing factors 3. solutions) 1) Active living: quality of pedestrian and bike paths; 2) Crime safety: CCTV & lighting; 3) Road safety: motorcycles & cars; 4) Comfort: noise, landscape, odor, green spaces; 5) Priority of the problems
Behavioral Pattern in the Target Area	<ul style="list-style-type: none">• The time they usually visit the target area• Visiting frequency• Main activities they usually do at the target area

V. How to Use the ENAP: Case Study

In-Depth Investigation of the Target Areas

Major Problems of the Target Area

- Crime safety : too dark alley
- Active living : poor road pavement

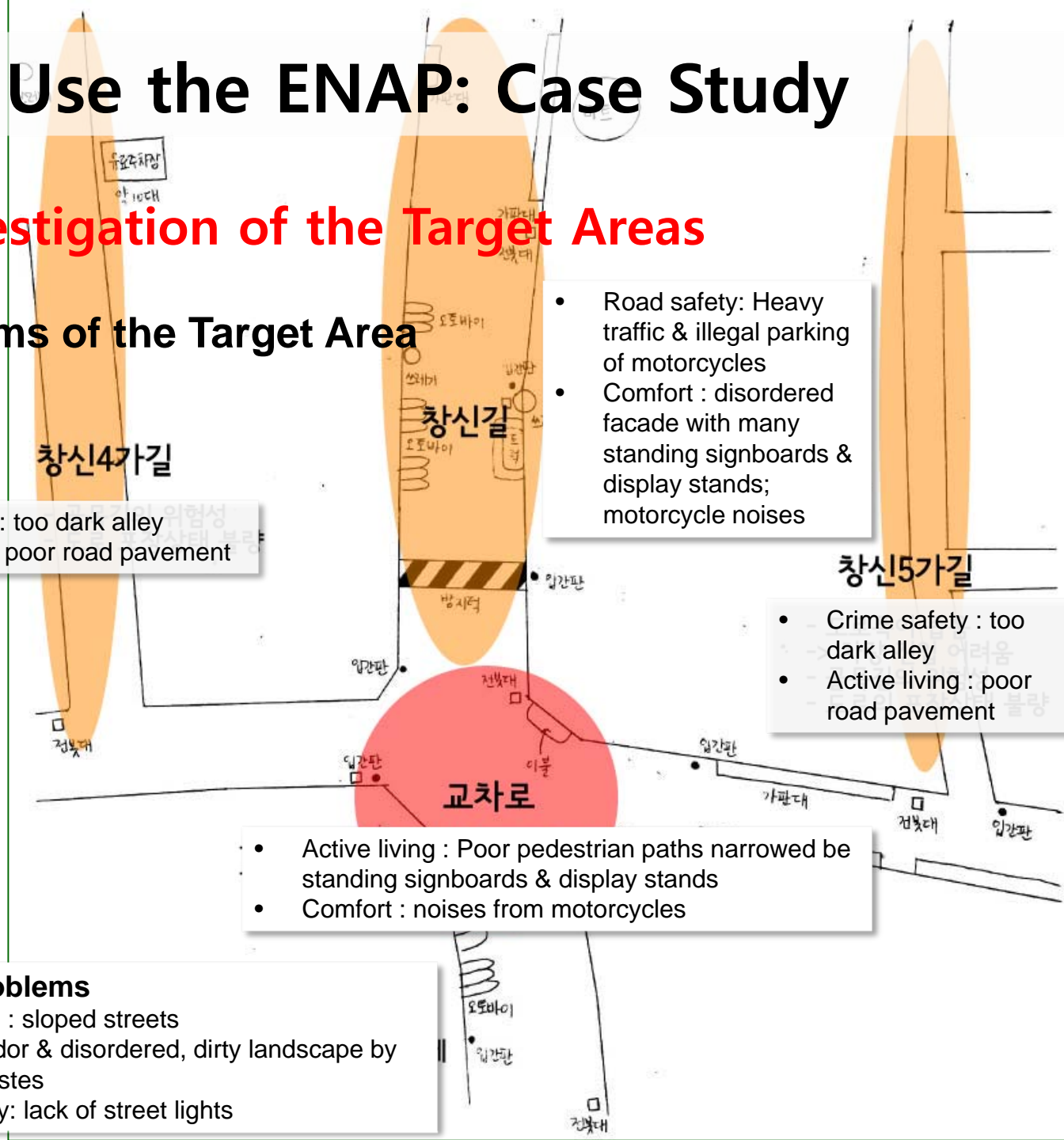
- Road safety: Heavy traffic & illegal parking of motorcycles
- Comfort : disordered facade with many standing signboards & display stands; motorcycle noises

- Crime safety : too dark alley
- Active living : poor road pavement

- Active living : Poor pedestrian paths narrowed by standing signboards & display stands
- Comfort : noises from motorcycles

Common Problems

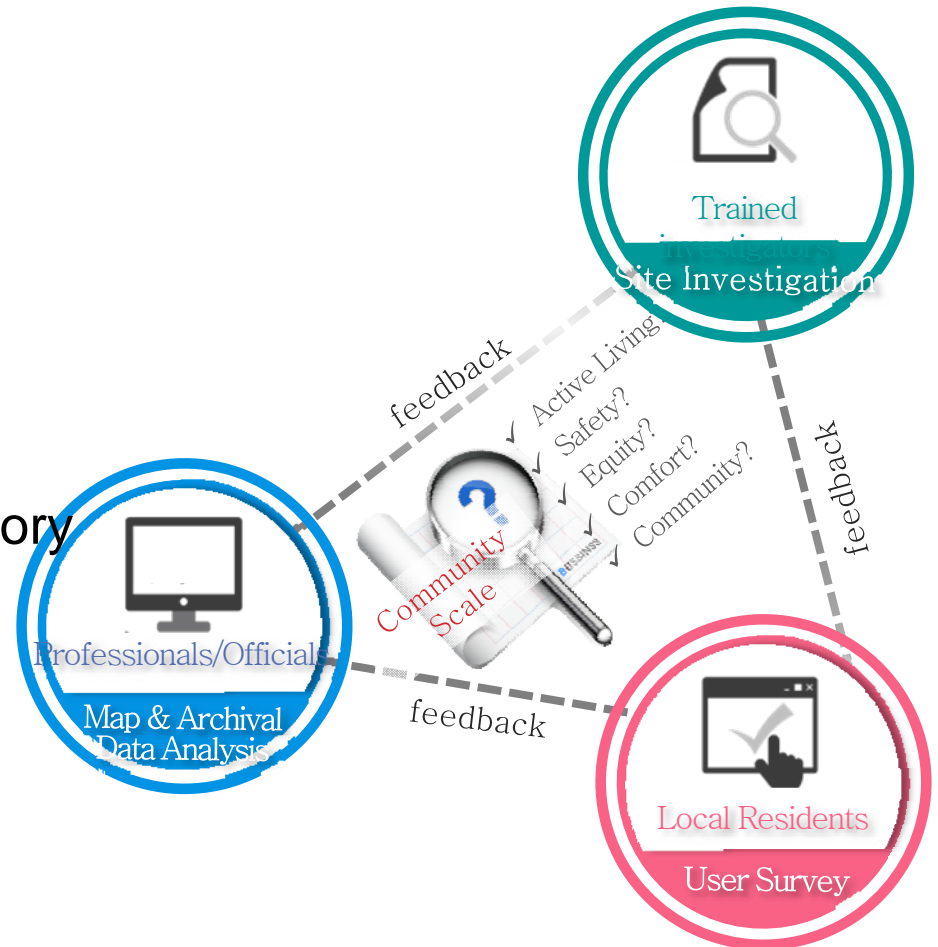
- Active living : sloped streets
- Comfort : odor & disordered, dirty landscape by dumped wastes
- Crime safety: lack of street lights



VI. Conclusions

Potentials of ENAP

- Ensure general qualities and reflect local context
- Enhance the reliability of the neighborhood environment evaluation
- Provide an efficient participatory planning tool



V. How to Use the Protocol: Case Study

Discussions

- Who will be the main actor use the ENAP?
- In which stage of a project, will the ENAP be most useful?