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

Case Selection

Diagnosis

- Map & Archival Data Analysis
- Site Investigation
- User Survey
- Triangulation

Prescription

- In-Depth investigation on the target area
- Participatory Design Process
- Developing Solutions
V. How to Use the ENAP: Case Study

ENAP Flow (Diagnosis)

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

### Preliminary Analysis Using Secondary Data
- **Pros:**
  - Low cost, time saving
  - Simple & easy investigation
- **Cons:**
  - Difficult to analyze the details

### Site Evaluation by Trained Investigators
- **Pros:**
  - Objective Observation
  - Small deviation of the evaluation
- **Cons:**
  - Less sensitive to local contexts

### Users’ Subjective Perceptions and Behaviors
- **Pros:**
  - Reflecting actual perceptions of users
- **Cons:**
  - Deviated responses according to the respondents’ personal history

### STEP 1
- 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)

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

Map & Archival Data Analysis: Example

- Example: Analysis of the facilities promote travel walk

  ✓ 10 community parks (26,822㎡, park area per person 1.2㎡)
  ✓ 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

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

Site Investigation

- Standardized Protocol
  - Schedule
  - Routes
  - Checklists with samples
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

<table>
<thead>
<tr>
<th>Goals</th>
<th>Sub goals or Strategies</th>
<th>Survey Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Living</td>
<td>More mixed uses to promote walk</td>
<td>- Mapping places where they frequently visit on foot or bike</td>
</tr>
<tr>
<td></td>
<td>Better pedestrian &amp; bike connectivity</td>
<td>- Evaluating the quality of pedestrian or bike routes</td>
</tr>
<tr>
<td>Safety</td>
<td>Crime Safety</td>
<td>- Evaluating overall perceived crime safety of the neighborhood</td>
</tr>
<tr>
<td></td>
<td>Road traffic safety</td>
<td>- Mapping the most dangerous places for crime</td>
</tr>
<tr>
<td>Equity</td>
<td>Universal Design</td>
<td>- Evaluating overall quality of the neighborhood for the disabled and elderly</td>
</tr>
<tr>
<td>Comfort</td>
<td>Noise, lighting, air &amp; water pollution/</td>
<td>- Evaluating overall comfort level of their neighborhood</td>
</tr>
<tr>
<td></td>
<td>Neighborhood identity &amp; Social activities</td>
<td>- Mapping the most uncomfortable places</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Mapping the places that they have an attachment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Mapping the places where they meet with their neighbors</td>
</tr>
</tbody>
</table>
V. How to Use the ENAP: Case Study

User Survey

- Example Analysis: Crime Safety

Lots of dark spaces due to lack of lighting
Desolate, lack of CCTV
Desolate, lack of CCTV

Number of Respondents

- 1-2
- 3-5
- 6-10
- 10+ 이상

200m
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

<table>
<thead>
<tr>
<th>구분</th>
<th>1위</th>
<th>2위</th>
<th>3위</th>
</tr>
</thead>
<tbody>
<tr>
<td>신체활동 문제지역</td>
<td>내부 주거지</td>
<td>봉제산업밀집구역, 종로</td>
<td>종로사회복지관 앞</td>
</tr>
<tr>
<td>범죄문제지역</td>
<td>봉제산업밀집구역</td>
<td>동대문성당공원</td>
<td>내부 주거지</td>
</tr>
<tr>
<td>교통문제지역</td>
<td>종로</td>
<td>종로사회복지관 앞</td>
<td>봉제산업밀집구역</td>
</tr>
<tr>
<td>패악성문제지역</td>
<td>창신시장과 종로 일대</td>
<td>봉제산업밀집구역</td>
<td>종로, 지붕로</td>
</tr>
<tr>
<td>저유니버탈장소</td>
<td>창계천</td>
<td>낙산중필</td>
<td>구민회관, 주민센터</td>
</tr>
</tbody>
</table>

[Map showing Triangulation: Locating Problematic Places]
V. How to Use the ENAP: Case Study

In-Depth Investigation of the Target Areas

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

<table>
<thead>
<tr>
<th>1. Video recording</th>
<th>2. User interview</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 investigator</td>
<td>2 interviewers</td>
</tr>
<tr>
<td>30 minutes * 3 ~ 5 times / day (morning; afternoon; evening; late night)</td>
<td>Interviewees: visitors, residents &amp; shop owners</td>
</tr>
<tr>
<td>The most critical spot of the area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Counting vehicle &amp; pedestrian volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 minutes * 3 ~ 5 times / day (morning; afternoon; evening; late night)</td>
</tr>
<tr>
<td>Use hand counters</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>4. Detailed field observation</th>
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</thead>
<tbody>
<tr>
<td>Measure of noise</td>
</tr>
<tr>
<td>Location of street furniture</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Classification</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviewee’s Characteristics</td>
<td>• Classification: Residents, Shop owners, Visitors</td>
</tr>
<tr>
<td></td>
<td>• Familiarity with the target area</td>
</tr>
<tr>
<td></td>
<td>• Demographic info. (age, profession, sex and family composition)</td>
</tr>
<tr>
<td></td>
<td>• Everyday life pattern (weekday/weekend)</td>
</tr>
<tr>
<td>Environment Quality of the Target Area</td>
<td>• Interviewee’s overall evaluation on the target area (1. evaluation 2. major influencing factors 3. solutions)</td>
</tr>
<tr>
<td>Behavioral Pattern in the Target Area</td>
<td>• The time they usually visit the target area</td>
</tr>
<tr>
<td></td>
<td>• Visiting frequency</td>
</tr>
<tr>
<td></td>
<td>• Main activities they usually do at the target area</td>
</tr>
</tbody>
</table>
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

- **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?