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Bits and Pieces: A Cognitive Mapping Study of Portland's Central City

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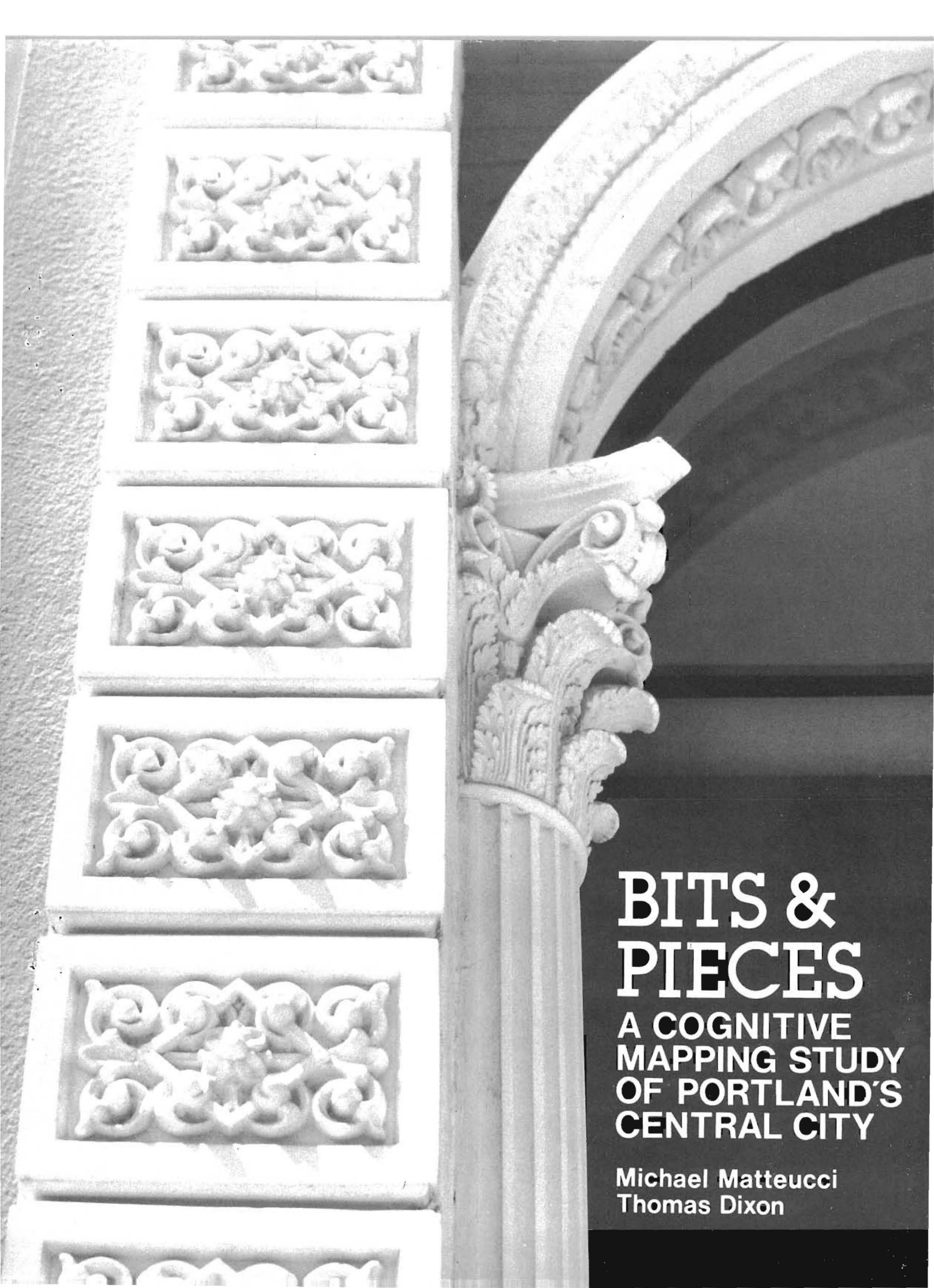
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BITS & PIECES

**A COGNITIVE
MAPPING STUDY
OF PORTLAND'S
CENTRAL CITY**

**Michael Matteucci
Thomas Dixon**

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ACKNOWLEDGEMENTS

Our apologies must go to Kevin Lynch, author of The Image of the City. Although the examples and guidelines he sets forth are clear and straight forward, slight alterations were necessary to adopt the project to Portland. Any shortcomings that result are due to our own lack of experience and discretion.

Special thanks must surely go to Dr. Sumner Sharpe for his excellent teaching of urban planning principles and the energy he put forth in getting this project approved. Without his interest and enthusiasm it would probably not have occurred.

Thanks too to Portland Commissioner Margaret Strachan for providing funding for the project and having confidence in its outcome.

A great deal of credit may be given to Bureau of Planning Acting Director Michael Harrison for arranging numerous meetings with us despite the demands of his busy schedule. Without his suggestions, advise and support, the project would have suffered and valuable time and experience would have been lost.

There are several individuals involved with the Central City Plan who also gave us assistance. Dean Smith made several accommodations to our needs, Judy Galantha did wonderful work with the graphics on the composite maps and Sandy Anctil had the unenviable job of preparing the final draft.

We must give thanks to members of the Central City Plan Steering Committee whose faith and interest in cognitive mapping made the work worthwhile. It is our sincere hope that the information obtained will be valuable enough to help lend a positive credence to understanding Portland as it is currently imaged.

Finally, our deep appreciation goes out to those citizens who took time and effort to participate in our survey. It was their willingness to share images and ideas about Portland tht proved, in the end, to be the substance of our report.

INTRODUCTION

People relate to the perceptual quality of any urban environment physically, mentally, and emotionally. Often, there are interactions that are based on visual images that occur between the individual and the city. The processing of these images - colors, shapes, sizes, spaces and motions - produces a composite picture of the city that gets translated into a "cognitive map." This aids each of us in adapting to and navigating through the multitude of urban elements.

By investigating the visual qualities of Portland, as seen through the mental images of some of its citizens, we have identified various elements that comprise the "legibility" of the city and the relative ease with which its parts can be recognized and organized into a coherent pattern (p 2-3). Kevin Lynch, who did similar studies of Boston, Los Angeles and Jersey City and whose model we used defines legibility as "the apparent clarity of the cityscape" (p. 2) and states that it is the crucial element in the urban setting (p. 3). Features such as landmarks, pathways, distinct districts and strategic points are all important in developing a pattern that results in a cognitive map. The legibility of such a map depends on the identity, structure and meaning that each of these elements produce.

Another important component in developing a cognitive map is the imageability that various elements possess which define the urban environment. Imageability can be thought of as "that generally in a physical object which gives it a high probability of evoking a strong image in any given observer." (p. 9) This includes anything which facilitates an object's identification, definition and vividness - color, shape or arrangement. The totality of these separate elements and features is useful for investigating the overall visual image of Portland. Building a composite image of the city, one that ties its parts and structure into a complete and coherent pattern, is the purpose of our investigation.

METHODOLOGY

Our original sample population was intended to come from names randomly selected from a telephone directory. After selecting a name, we tried to make phone contact with the individual to briefly explain our project and request a personal interview with the respondent. However, our response rate from this method was only 4% so we decided to shift to a stratified sample. This involved contacting businesses in person or by phone, approaching strangers in public places, networking interviews with acquaintances and getting references from people who were themselves not interested (or "informed enough") but mentioned someone who they thought might be interested in doing an interview.

In setting up interviews, different locations were used. Several interviews were conducted at the Portland Building when respondents found that to be a convenient location. Some of the interviews took place in the homes of participants, a few were done in parks and at the library. Most often, interviews were conducted at business locations during business hours as individuals seemed most inclined to participate when interviews were conducted during business time and not personal time.

The format of the interviews involved responding to questions and working on a map. The map was an 11" x 17" sheet of paper which showed the outline of the Willamette River down the middle. Directional points were included in order to confine responses to the Central City area. These were identified as: 1) N.E. Fremont, 2) S.E. 20th, 3) Ross Island and 4) the West Hills.

After an initial question aimed at gathering general images about Portland, respondents began working on the map sketching a rough layout of the city. The purpose of the map was purportedly to provide guidance to a newcomer traveling about the city and to indicate places they might likely see or want to see during their visit. These maps usually identified elements that would assist navigation - streets, grids, bridges, landmarks. Destination points such as - Washington Park, Old Town, Downtown, Waterfront Park were important features of the maps.

After working on the maps additional questions were asked about the respondent's route to work, listing of positive and negative features of Portland, identification of the individual's favorite place, outlining of distinct areas and districts and finally, reasons individuals go into the central city area and the mode of transportation used to get there. Following the questions, a full and detailed account of our project was given to each subject. Subjects were also encouraged to ask any questions about the concept of "cognitive mapping" since most were unfamiliar with it before the interview.

The interviews were almost always conducted in private and were intended to be as informal as possible while staying within the structure of the questions. This encouraged a conversational type of interview with the subject often thinking out loud in expressing images, opinions and thoughts. It also produced an air of trust between interviewer and interviewee that permitted a good flow of information.

Although the majority of the interviews went flawlessly and effortlessly, some subjects had great difficulty with making maps. Cartophobia - the fear of maps and map making - seemed to make some respondents uncomfortable and maybe a little intimidated. This necessitated encouragement and probing from the interviewer which was successful in all but one case. One subject refused to work on the map, stating that it was simple enough to purchase an accurate map without having to go to the trouble of making an inaccurate one. Not surprisingly, the verbal responses of subjects showed a much greater consistency than their cartographic efforts.

LIMITATIONS

It must be recognized that our survey is not scientifically viable. This has to do with factors such as our sample selection process, biases within the survey and the sample size.

Because our sample was non-randomly selected the result was a predominantly middle class, well-educated professional sample. This was due in part to nearly 30% of the sample being prior acquaintances gained either directly or through networking. It must be pointed out, however, that a concerted effort was made to get as broad a sample as possible given the restraints of time and resources available.

The obvious biases of such a sample are many. First, only people who had ideas to share, the inclination to share them and/or the time necessary to do a 45 minute interview agreed to participate. In several instances individuals showed an interest but regrettably had to decline an interview due to the time required. Secondly, acquaintances were more willing to be interviewed than the general population due to familiarity with us as interviewers. Also, people who knew us previously may have been familiar with our backgrounds in urban affairs/planning and possibly shared an inclination toward a certain way of thinking. Thirdly, some people were offended about being approached by strangers. This undoubtedly had the eventual effect of causing us to approach only those individuals who appeared likely to be receptive to our solicitations. Finally, some subjects (those who were unknown to us previously) were suspicious of our motives and with possible negative impacts that could result from their participation in a "survey." Questions such as "Why do you want to interview me?", "How is this information going to be used?", "Is this off the record?", "Are you going to quote me?", etc. all pointed to skepticism about our motives. Such misgivings about our intentions and hesitations in responses may have effected interview responses in some cases.

Our sample size was also somewhat small - a total of 74 interviews which included six members of the Steering Committee. From such a small number of interviews and the character of the sample population, generalizations to Portland's entire population must be carefully made. Admittedly, our response rate from blacks and senior citizens was very poor with the result being an under-representation from both of these groups. However, effort was made several times to contact members of each group with only limited success.

Notwithstanding these deficiencies, we feel comfortable that our survey is representative of Portland's population. We made special effort to draw people in from all parts of the city, from various economic and educational levels and from different ethnic groups. From the information gathered and the cognitive maps produced from our separate interviews we are confident that the results are valid and reliable. One of the important aspects of our survey was to acquire a legitimate level of information and translate it into composite sets of indicators that reflect the imageability of various aspects and

features of Portland. To this end our survey contains an internal consistency that reinforces our initial intentions.

ANALYSIS

In analyzing and interpreting information gained from interviews it is important to precisely define terms involved in the project. The terms that follow each connote an aspect of the urban environment that influences perceptual functioning.

1. Paths - routes people take when moving through the city. Primary examples are Burnside Street, I-5 and I-405. These paths were identified most often as those used when moving through and around the city.
2. Edges - boundaries between two separate areas. Edges define where one type of area closes off from another. The edge of the Willamette River is a very well defined edge while the West Hills are more vaguely defined. Both were considered distinguishing elements of Portland.
3. Districts - sections of a city that have common and recognizable features that set it apart from other areas. The features may include activities, architectural styles, character or special qualities that make it noticeably different. Old Town was often identified due to its historic character and interesting architecture. The Northwest Industrial district was mentioned for its industrial activities and displeasing aesthetic qualities.
4. Nodes - strategic points within a city that the observer can enter, observe, and/or pass through. Pioneer Square is a common example. However, sections of Union Avenue where prostitutes hang out are also examples of nodes. Another would be an intersection where traffic converges such as when entering the downtown area from the Hawthorne and Morrison Bridges.
5. Landmarks - reference points which stand out for the observer due to uniqueness and specialization. Landmarks may be visible from great distances, the KOIN Tower and U.S. Bank building can both be seen from great distances and various angles. Or, the landmark may be more localized and observed from only limited perspective due to location and/or size. The Skidmore Fountain or the Elk Statue are examples.

On the composite maps we used absolute frequencies to differentiate three levels of intensity identified by respondents. In descending frequency of mention these are: 1) major - 20% or over (or 1 in 5 of total respondents), 2) minor - 10 - 20% (1 in 10) and 3) incidental - 2 - 10% (1 in 20). An example of this type of differentiation in frequency appears on the composite map that indicates nodes. In this case Pioneer Square appears as a major node, Saturday Market as a minor node and the new Cornerstone Development Project as an incidental node.

It is important to point out that the number of features mentioned was of great variety and interest. Many subjects delighted in pointing

out things that few others knew about or indicated. However, it was necessary to make separations into the three levels in order to build a hierarchy of information that was clear and ordered. If we had included every feature mentioned in our interviews the results would have been maps congested and confusing. The importance of our approach is that frequency of mention is indicated by intensity and exemplifies the "imageability" with which Portland is viewed by our respondents.

FINDINGS AND CONCLUSIONS

The basis for any substantive conclusions is derived from analyzing as equally as possible information gained from verbal reports and sketches of individual maps. Although ours was not an in-depth study, meaningful and useful information emerged using this technique.

The most overwhelming feature of Portland, when imaged by respondents, is the role of the Willamette River in defining the city. Perhaps the attention given the river by subjects was partly a function of it being the only defined feature on an otherwise blank map. However, mention of the river was clearly an identifying image of Portland even before respondents saw the maps and began sketching.

The river is so influential in defining Portland that it seemed to permeate images in various ways, each time having a significant influence on corresponding areas. This is most evident when the edges are analyzed - the river seems not to be just a sharp natural definition but a character dividing element as well. For the segment of the river from the Ross Island Bridge up to the Steel Bridge this seems particularly true. It is here, that the river sets the eastern edge of Downtown and the western edge of East Portland.

Waterfront Park is an important feature of the river and this undoubtedly draws awareness to the sharpness of the river's edge on the west bank. While several people used the park as a path, others identified it with activities usually associated with a node. However, identified and imaged, it is prominent in both the visual and the verbal responses.

In the case of districts the river again served as a separation feature as no district crossed the river to join another part on the opposite bank. Although this is not surprising it is indicative of the definitional nature of the river.

Edges are not the same as barriers and this is indicated by the frequent mention of bridges. Although each bridge has its own individual characteristics they serve as important paths for the crossing of the river. This adds a unique and unifying experience for those who use them, providing opportunities to observe river activities and offering vistas of Downtown.

Besides their functional value, the individualities of the bridges serve as orientational points and directional guides which increase the legibility of city navigation. This may explain in part why they are seen as special aspects of Portland's imageability.

The Downtown area is full of nodes and landmarks. Pioneer Square was frequently mentioned owing to the diversity of activities and attractions it offers. Saturday Market was also a commonly identified node, seen as a unique Downtown feature and a primary shopping attraction. For both of these nodes, activities such as music and people watching and their easy access added to their appeal.

A surprisingly mentioned node was the new Cornerstone Development project being built. Despite its incompleteness, it is already viewed as a very visible addition to Portland. This project readily points out the enormous visual impact of the river's edge and how activities and features along the river reinforce Portland's imageability. This is in grave contrast to the composite map from verbal interviews that show the east side of the river as a complete void.

The Park Blocks were another Portland feature that came up often. However, when sketching this area on maps, the vast majority of respondents located only the South Park Blocks, completely neglecting the northern extension of the park. When asked about this some respondents stated that this was due to the difference in character of the two areas - the North Park Blocks becoming almost an off-limits area to all but transients.

The frustrations of light rail construction is another feature of Portland that is currently affecting how some respondents image the city. The frequent mention of construction, although most often just a general comment, points to a feeling that the urban environment is "always" in the throes of change. This is especially noticeable in Portland since the Downtown area is small and compact. Two or three simultaneous construction projects seem to overwhelm the city whereas in or larger cities their effect would not be so dramatic.

Finally, the image of Portland as a city interested in and devoted to preservation is a positive one. Many respondents proudly identified this as something they supported, especially long-term citizens who had seen times when this wasn't emphasized. Historic preservation seems to be an emerging image of Portland.

The diversity of responses that people gave us indicate that many people are unfamiliar with city planning and how exactly it operates. Most of the people we interviewed were actually delighted to have been involved in our survey and seemed pleased to know the importance of their contribution and how it would be used. Although details were sometimes missing from interviews or people couldn't remember specific names for things, most respondents nevertheless felt that Portland was doing a lot of good things. From our research, analysis and "intuitive" insights gained from these interviews, we feel the following recommendations are consistent with the Central City Plan and would be useful for consideration:

1. Extension of the current boundaries. Many respondents identified emerging shopping areas as integral parts of Portland. In particular N.W. 21st and 23rd Streets and Hawthorne Streets are seen as closely bound to Central City activities and development.
2. Clarification of "Central City." There still seems to be confusion on what this area encompasses. Respondents unfamiliar with the Central City Plan often confused "central" with "core" or downtown and it was difficult for some to conceive the broader boundaries that are defined. Even respondents who had knowledge of the Central City Plan were confused by its exact boundaries.

3. Lack of eastside landmarks. It has long been recognized that there are two distinct Portlands - East and West. Part of the problem with the Eastside is its lack of imageability. There is really no distinguishing or unifying feature to make it compliment the westside. The visual impact that the new Cornerstone Project is having on the waterfront is a perfect example of what could be done on the eastside to provide an identifying feature. Future development should be encouraged on the east bank for this reason.
4. Liven Portland's night life. A common complaint voiced about Portland was the absence of evening/night options for those interested in being in the city then. Far from being an active 24-hour city, Portland was several times described as a city "that rolls up the sidewalks after dark." Suggestions to improve this included a downtown dome/convention center and conversion of warehouses into middle income housing in Old Town.
5. Keep Portland manageable. The accessibility and compactness of the Central City is viewed as very positive in making Portland "legible" to its residents. Aptly described as a "20-minute city" - you can get anywhere in the city or completely out of it in that amount of time - indicates that physical size is a virtue most people don't want destroyed.
6. Make preservation a city-wide matter. Although historic preservation was appreciated in parts of Downtown, some respondents felt it was neglected in neighborhoods and outlying areas. They suggested a more consistent approach in preserving older houses and special districts.

COGNITIVE MAPPING WORK PROGRAM

GENERAL OUTLINE

- Step 1. Test and refine the interview format.
- Step 2. Select a sample and conduct interviews with 80-120 individuals.
- Step 3. Construct a composite cognitive map of the Central City from results of individual interviews.
- Step 4. Identify significant consistencies between the cognitive map constructed from the individual interviews.
- Step 5. Finalize results into both a written and a graphic product.
- Step 6. Present results to the Central City Citizen Steering Committee.

Steps 1 and 2 are presented in more detail below:

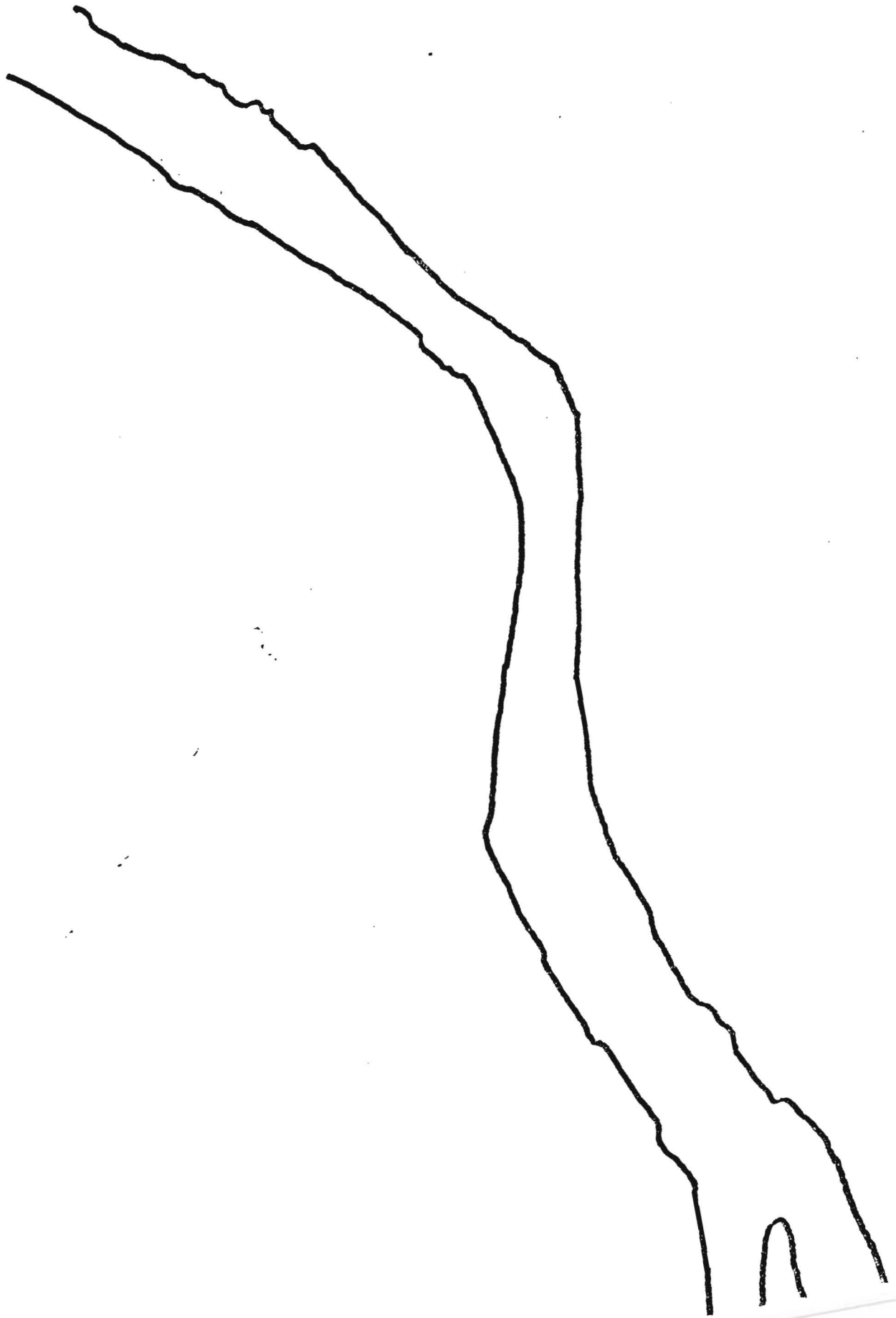
Step 1.
Interview Format:

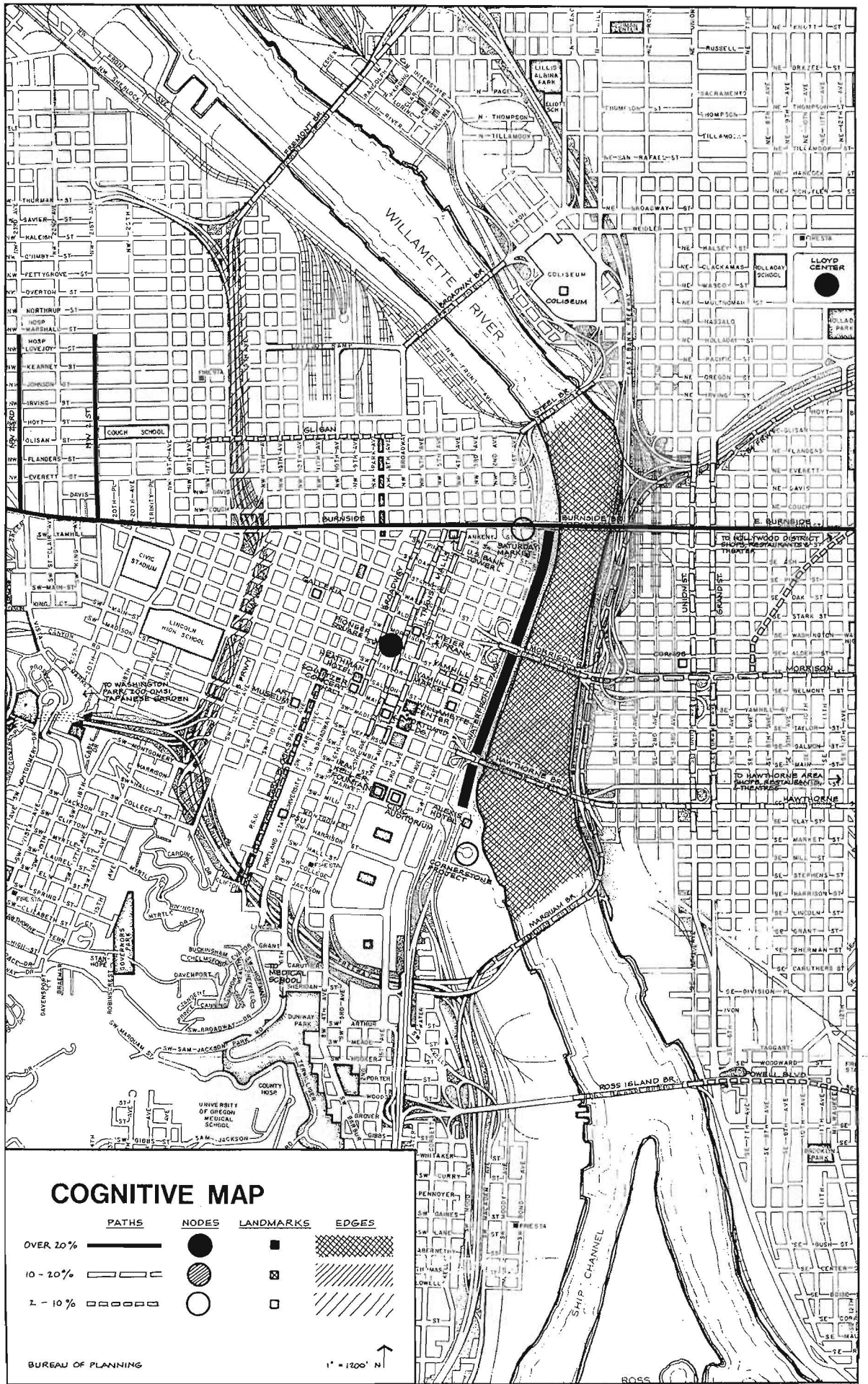
The interview will include the following questions and activities:

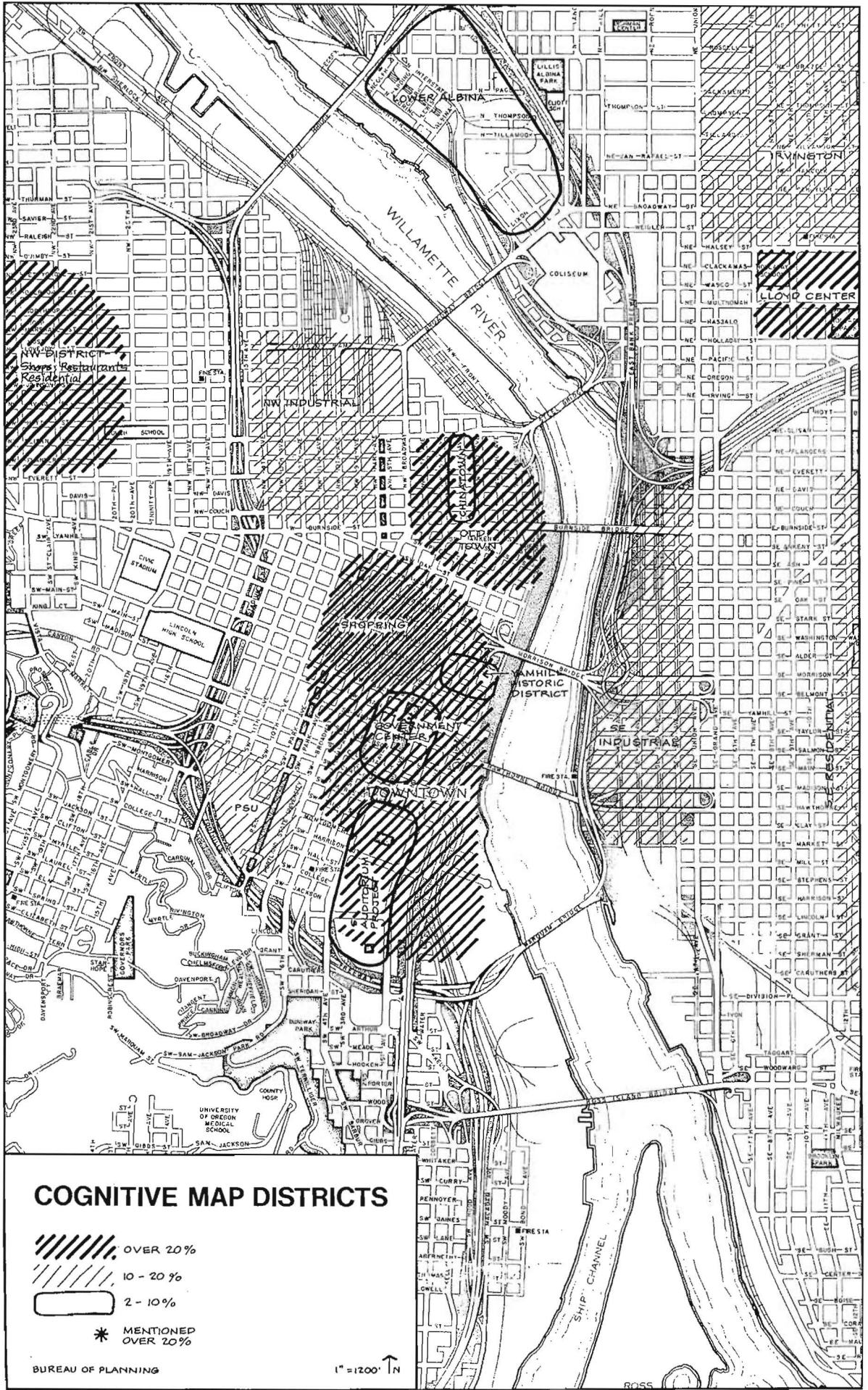
1. Explain the purpose and method of the interview.
2. What image first comes to your mind when you think of Central Portland? How would you describe Central Portland to a person who was planning to visit Portland for the first time?
3. Please make a quick map of Central Portland working outward from the Willamette River...just a rough sketch, the kind of sketch you might make to guide a first-time visitor.
[Interviewers note the sequence of things shown on the sketch.]
4. Please give detailed directions for a trip between your home and the place where you work. Picture yourself making the trip and describe the sequence of things you would see, hear or smell along the way. Include landmarks and other objects that you would use to navigate or that you would advise a visitor to look for in making this trip. We are more interested in places and objects as you remember them than their actual name or their precise location.
[During description of trip interviewers should ask for more detail where needed to identify specific places and objects.]

5. What features of Central Portland do you think are most distinctive? They may be large or small; what we want are those things that come easiest to memory.
6. Do you have a particular emotional reaction or feeling about any of these features? Which features do you think are good for the city? Which are bad?
7. Within Central Portland, pick the place you enjoy most. If you were taken there blindfolded and the blindfold were removed, how would you know where you were?
8. Show on the map (Question 3) where this place is.
9. Within Central Portland, are there any distinct areas? Please describe what distinguishes these areas. Also please indicate on the map the approximate boundaries of each district.
[Interviewers ask for details of boundary location.]
10. Besides work, is there any other place you frequently go to within Central Portland? How do you get there? What do you see, hear or smell along the way? Include landmarks or other objects you use to navigate by and which a visitor might need to find the place.
11. Besides what we have talked about, is there something else about Central Portland you would like to mention? Why or what is special about this?


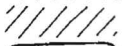
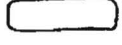

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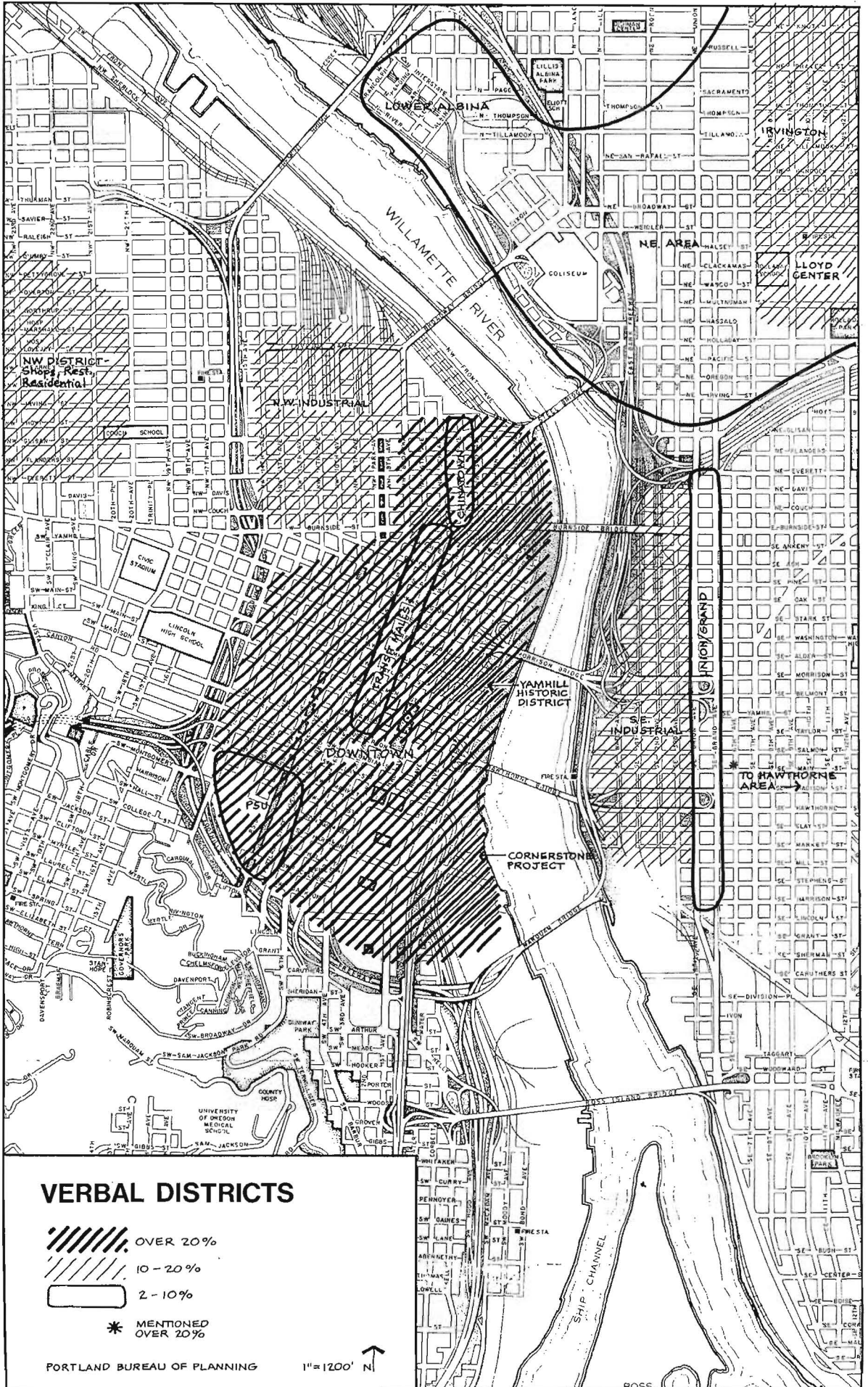


COGNITIVE MAP DISTRICTS

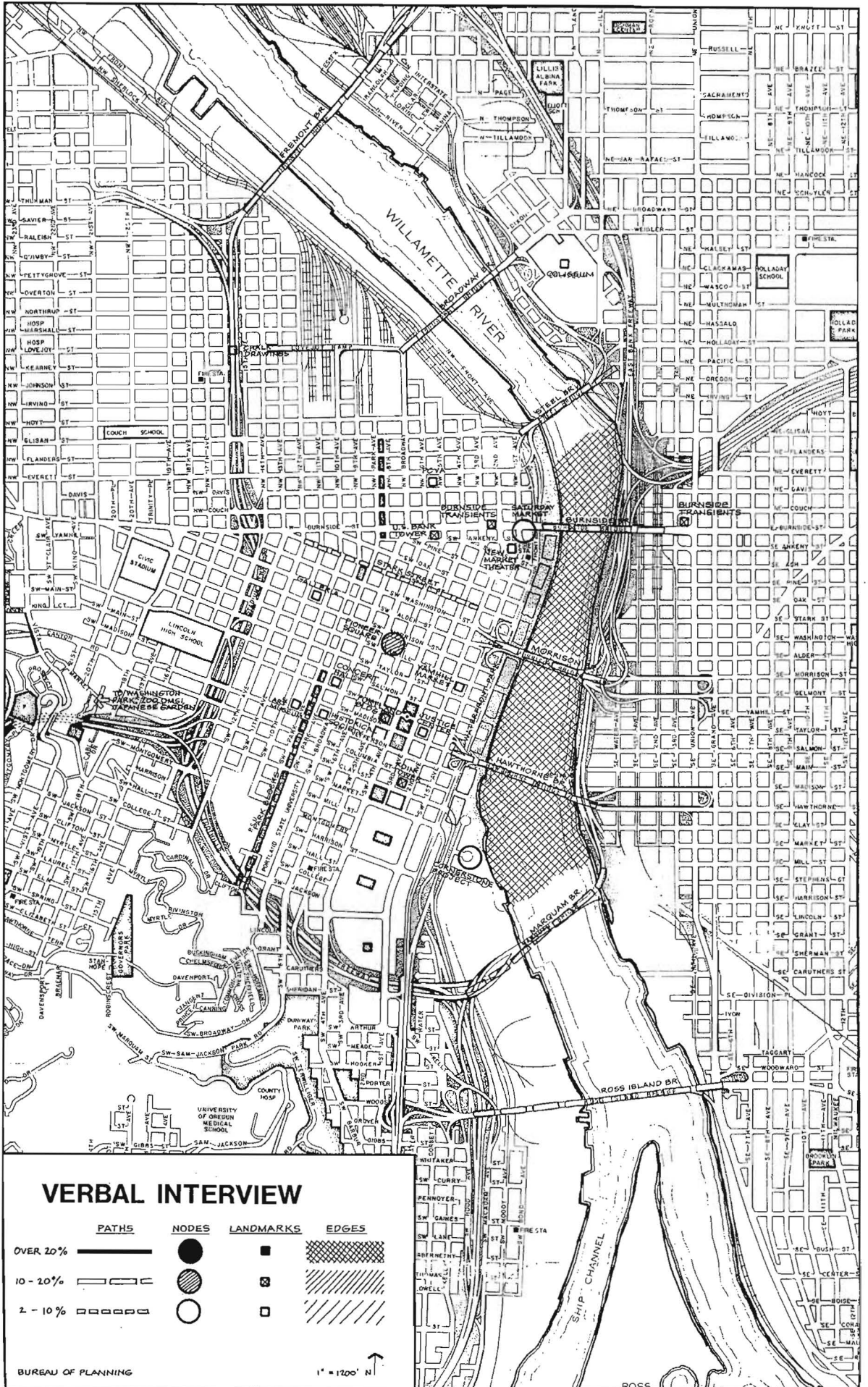
-  OVER 20%
-  10 - 20%
-  2 - 10%
-  * MENTIONED OVER 20%

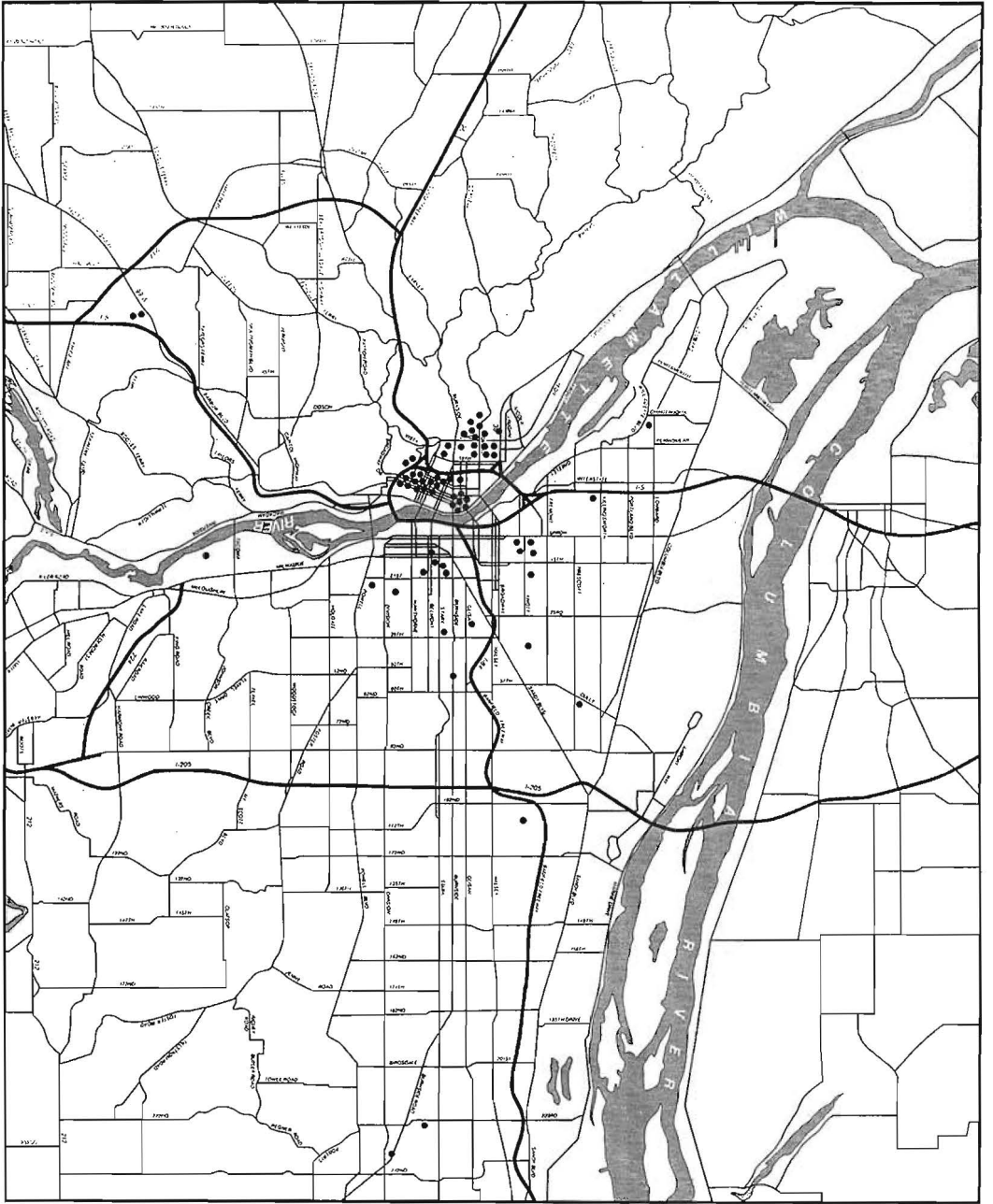
BUREAU OF PLANNING

1" = 1200' ↑ N



Map labels include: LOWER ABNJA, WILLAMETTE RIVER, NE AREA, LLOYD CENTER, NW DISTRICT - Shops, Rest, Residential, NW INDUSTRIAL, YAMHILL HISTORIC DISTRICT, CORNERSTONE PROJECT, SHIP CHANNEL, UNIVERSITY OF OREGON MEDICAL SCHOOL, and TO HAWTHORNE AREA.





**ADDRESSES OF
INTERVIEWEES**

BUREAU OF PLANNING

1" = 10,000' ↙