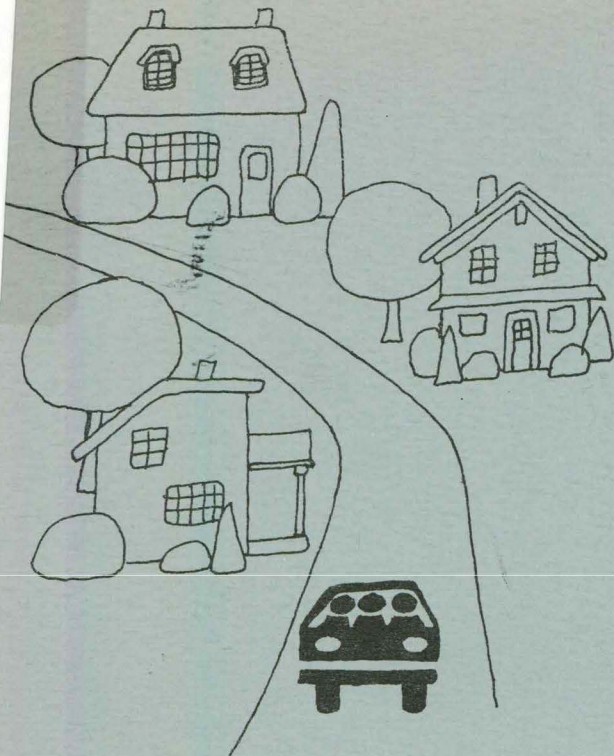


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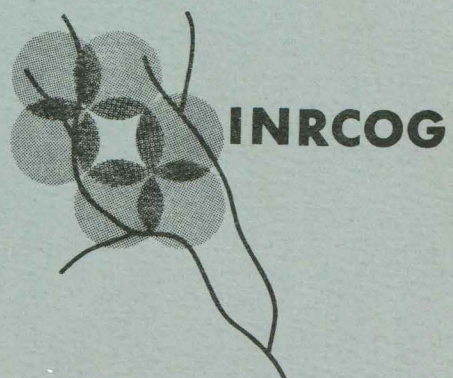


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carpool

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IOWA NORTHLAND REGIONAL COUNCIL OF GOVERNMENTS

REPORT ON THE FEDERAL HIGHWAY ADMINISTRATION
CARPOOL DEMONSTRATION PROJECT

REGION VII

Black Hawk, Bremer, Buchanan, Butler,
Chickasaw, and Grundy Counties

NOVEMBER 1975

The preparation of this report was financially
aided through a Carpool Demonstration Project
No. M-0000 (501) -- 81-07 authorized by the
Federal Highway Administration.

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INTRODUCTION

In response to the energy crisis of Winter-Spring 1974, the United States Department of Transportation, Federal Highway Administration, developed a carpool matching system. This system was made available to groups interested in conserving energy through carpooling. Funds in the form of federal matching grants were also made available to governmental bodies to promote carpool formation.

This system developed by FHWA consists of a computer program, survey techniques, promotion ideas and carpool organization manuals. The information package is available on request, as is a magnetic tape copy of the computer program. In Iowa, The Department of Transportation has the program on its system, and carpool projects from throughout the State are processed at this central location.

The Iowa Northland Regional Council of Governments received a \$13,500 matching grant to utilize these resources in a carpool demonstration program centered on the region's largest employers. The employer-based approach to carpool organization takes advantage of the high concentration of people at work. Using existing in-house distribution channels, large numbers of workers can be surveyed to gather the information necessary for carpooling.

The project is truly a regional undertaking, even though the participating firms are all in either Waterloo or Cedar Falls. Because employees commute into the metropolitan area from several adjoining counties, a carpool matching service can benefit the entire six-county INRCOG region.

METHODOLOGY

Participating Firms

It was thought that the INRCOG grant money would most efficiently be used to serve the largest number of people if the carpool demonstration project were initiated with large employers. Therefore, the personnel manager and other officials at several of the area's larger firms were asked to participate. At the time of contact, the employer and an INRCOG staff member discussed the advantage of carpooling that could accrue to both the employer and the carpooling employee as well as possible incentive structures the employer could institute to show his support of the project.

Table I lists the current employment figures of the firms which agreed to participate.

TABLE I

<u>Firm</u>	<u>Number of Employees</u>
John Deere Waterloo Tractor Works	12,200
Hawkeye Institute of Technology	300 ¹
The Rath Packing Company	3,000
Chamberlain Manufacturing Company	950
Viking Pump Company	744
University of Northern Iowa	760 ²

¹ Students who would be enrolled for at least four quarters as well as faculty and staff were surveyed.

² Because summer school ends in early August and a large percentage of U.N.I.'s summer students are here for summer coursework only, only permanent staff employees were surveyed. If the project is successful, faculty will be included in an updating process. Students are served by a voluntary carpool sign-up system sponsored by the University.

The Survey¹

A survey instrument developed by the FHWA organized relevant information about employees of each firm who indicated an interest in carpooling.

Each survey respondent provided the following basic information: name, address, phone number, place of employment, and work schedule. The social security number was also required, but simply as a means to keep together the two computer punch cards necessary to record the answers for each questionnaire. The respondent identified the grid location of both his/her home and work place by using the coordinate numbers found on either the regional map or the metropolitan area map provided with each questionnaire. This body of information formed the core of the matching system.

The computer program developed by FHWA stored this information for each respondent. By sorting the data into matching residential grid locations, work locations, and time schedules, the program could list groups of persons for which these items were identical. These groups were the most highly convenient carpool partners. If fewer than eight persons were found through this initial scanning procedure, the computer was programmed to check the eight grid cells adjoining the respondents' home grid cell for additional persons working at the same place and having the same time schedule. These persons were also considered potential carpool partners.

¹See Appendix I for a sample questionnaire.

Each employee interested in carpooling would receive this list of potential partners with similar home addresses and working locations. In addition to name, address, phone number, and working hours, the listing included each employee's department, whether or not he/she was already in a carpool, the number of persons in that carpool, and whether that person would rather drive, ride, or share driving and riding. Each interested respondent, therefore, would acquire enough information about other potential carpoolers so that contact could be made with high probability for a successful match.

PROMOTION

The first step in promoting the carpool campaign was to contact the Mayor of Waterloo and the Mayor of Cedar Falls. They were each asked to sign a joint letter supporting INRCOG's carpool demonstration project in the Waterloo-Cedar Falls area. This letter was then presented to the personnel director of each firm as evidence of official support. Upon completion of the project, a similar joint letter of appreciation was sent from the mayors to the participating firms commending them for their involvement.¹

A good promotion campaign before the in-plant survey was very important. In the plants, advance notice of the upcoming survey appeared in newsletters and in special postings. Articles in these newsletters pointed out the advantages of carpooling and prompted people to think about carpooling as an energy-conserving and money-saving alternative to individual work trips. A standard 17 x 22 poster, designed by FHWA, was distributed well in advance of the survey date followed by a promotional release designed especially for this project.

The Frank Cooper Advertising Agency designed the local media promotional campaign which included these features: a large poster and a small poster for distribution in the participating firms, one 30-second and two 10-second T.V. commercials, two 30-second radio spots, four 10-second radio spots, various newspaper ads, and several news releases.² Local media cooperated by providing public service space for these advertisements.

¹See Appendix II

²See Appendix III for an example of a radio and T.V. commercial.

This promotional campaign over the public media complemented the news-letter approach by providing an important additional contact with employees to be surveyed and by accenting the regional nature of the project.

It was hoped that this promotional activity would generate interest among employees of firms not participating in the initial demonstration project. For them, a do-it-yourself carpool package was available. Employees were encouraged to contact their employers if they were interested in carpooling to encourage them to make use of INRCOG's carpool organizing package.

RESPONSES TO THE SURVEY

Return Rates

In general, response to the carpool survey was good. The return rate was 25.8% with 4,626 questionnaires returned. Over 2,600 persons indicated they wanted to be part of the matching program for a favorable response rate of 14.7%. In addition, over 1,300 people (7.5%) reported that they already carpool.

Table II lists pertinent response data from each participating firm with percentage figures based on the total number of employees in each firm.

Clearly, the response rate varied widely among the groups surveyed, due to variances in survey distribution and collection procedures. The proportion of returns which included "yes" responses to the interest question, however, was more uniform among the groups. In all cases, more than one-half of the respondents expressed a willingness to be part of the carpool matching program. This higher percentage would be expected because interested persons would be more likely to complete and return the survey than uninterested persons would be.

Table II
RETURN RATES

	Total Employees	Total Returns	"Yes" Responses*	Already Carpool ^a	Average Occupancy Existing Carpools
H.I.T.	300	201 (66%)	148 (50%)	49 (16%)	2.86
Viking Pump	744	398 (53%)	207 (28%)	104 (14%)	2.83
U.N.I.	760	127 (17%)	58 (8%)	13 (2%)	2.30
Chamberlain	950	224 (24%)	124 (13%)	51 (5%)	3.77
Rath Packing	3,000	147 (5%)	93 (3%)	27 (1%)	2.74
John Deere	12,200	3,672 (30%)	2,569 (21%) ^b	1,118 (9%)	3.43 ^c
Raw Totals	17,954	4,626 (26%)	3,199 (17.5%)	1,353 (7.5%)	--

^aThere is some overlap between "yes responses" and "already carpool" because many people who already carpool answered "yes."

^bThis figure includes both "yes responses" and those "already carpooling." Due to the large number of returns, these two categories were not distinguished for John Deere, these figures also include people already carpooling who did not respond "yes" to the interest question.

^cThis figure excludes John Deere charter buses. Some people reported 10-15 people in their carpool (vanpools).

*A "yes" response indicated a willingness to be included in the carpool matching program.

Spatial Distribution of Returns

Figures 1a through 6a and Table III provide an informal perspective into the spatial distribution of the residences of each firm's employees.

For the purpose of constructing these figures, the region was arbitrarily divided into four concentric zones delineating the following distances from the center of the Waterloo-Cedar Falls area: fewer than ten miles, between twenty and thirty miles, between thirty and forty miles, and more than forty miles. The frequency of returns from each zone was recorded by firm so that the appropriate percentages could be determined.

The firms that seem to attract employees or students from the greatest distances are Hawkeye Institute of Technology (Figure 5a) and John Deere (Figure 6a). In each case, a small but clearly defined percentage of the respondents' residences falls into Zone #4. John Deere is by far the area's largest employer and seems to have considerable more drawing power than do the other firms in the region. Hawkeye Institute is a community vocational school that attracts many commuting students. The Personnel Manager estimates that nearly forty-five percent of their students commute at least ten miles. A good share of these students work as well as attend classes. Since Hawkeye is the only facility of its kind within the area covered by this survey, it tends to attract students from considerable distances.

The University of Northern Iowa (Figure 1a), on the other hand, is almost entirely oriented toward Cedar Falls. According to survey results, U.N.I. employees live quite close to their jobs.

SPATIAL DISTRIBUTION OF RETURNS

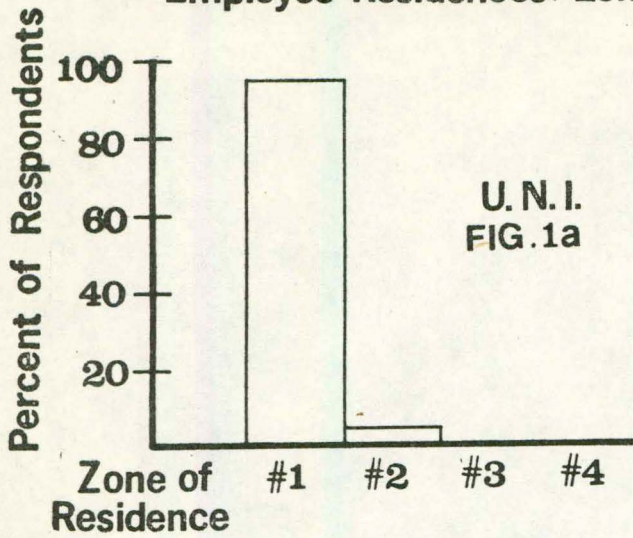
TABLE III

	Total Employees	Total Respon- dents ¹	Zone of Residence ²			
			Zone #1	Zone #2	Zone #3	Zone #4
U.N.I.	760	140	135 (96%)	5 (4%)	--	--
Rath Packing	3,000	144	133 (92%)	11 (8%)	--	--
Viking Pump	744	393	315 (80%)	54 (13%)	24 (7%)	--
Chamberlain	950	217	173 (79%)	24 (11%)	20 (10%)	--
H.I.T.	300	197	137 (70%)	26 (13%)	30 (15%)	4 (2%)
John Deere	12,200	3,667	2,711 (74%)	503 (14%)	354 (9%)	99 (3%)
Totals	17,954	4,758	3,604 (76%)	623 (13%)	428 (9%)	103 (2%)

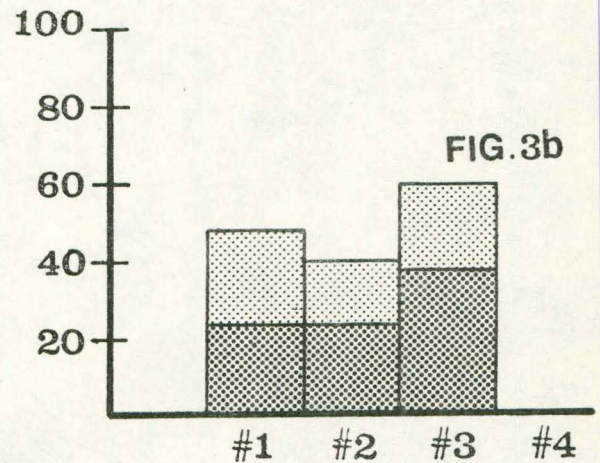
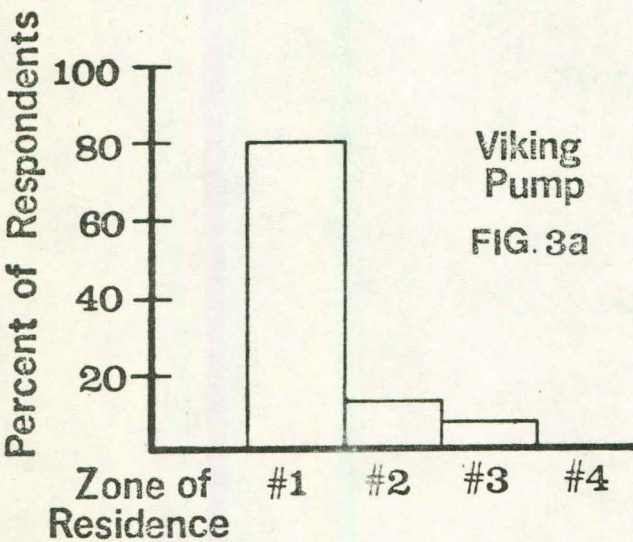
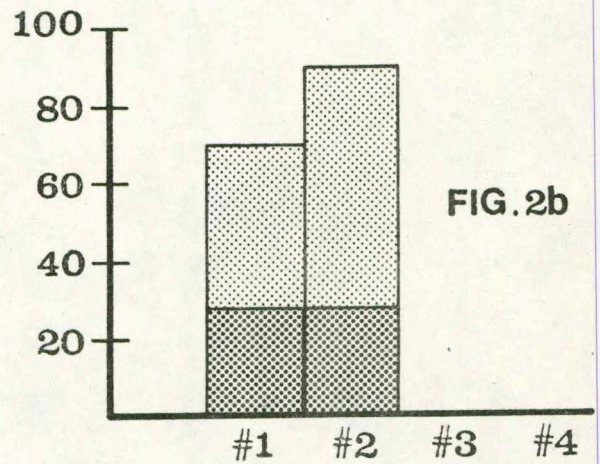
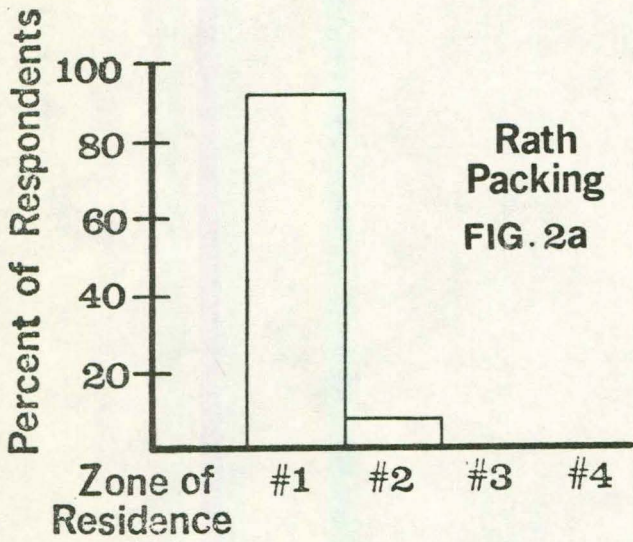
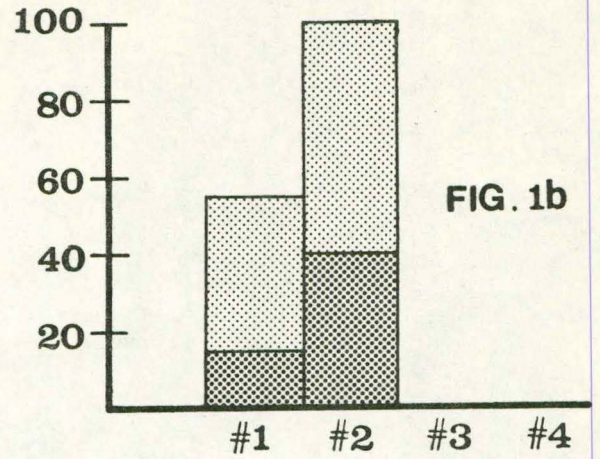
¹ Figures differ from "Total Returns" in Table II due to the presence of incomplete questionnaires or multiple answers

² Percentages are the percent of total respondents in each zone.

Employee Residences/Zone



Carpooling Interest/Zone

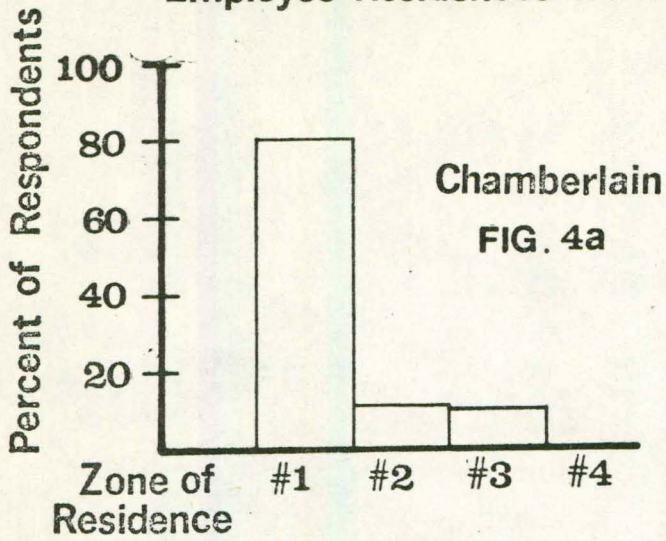


Zone

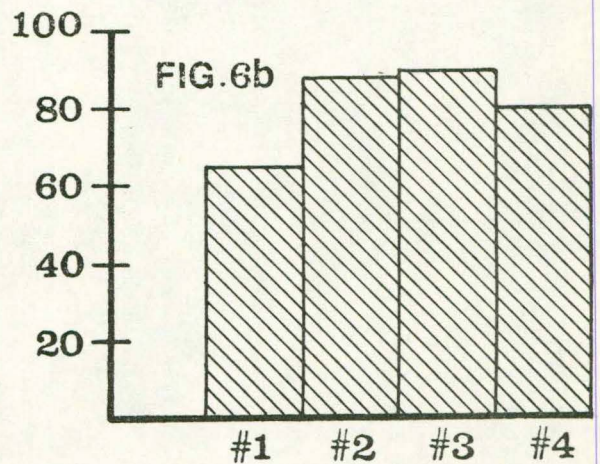
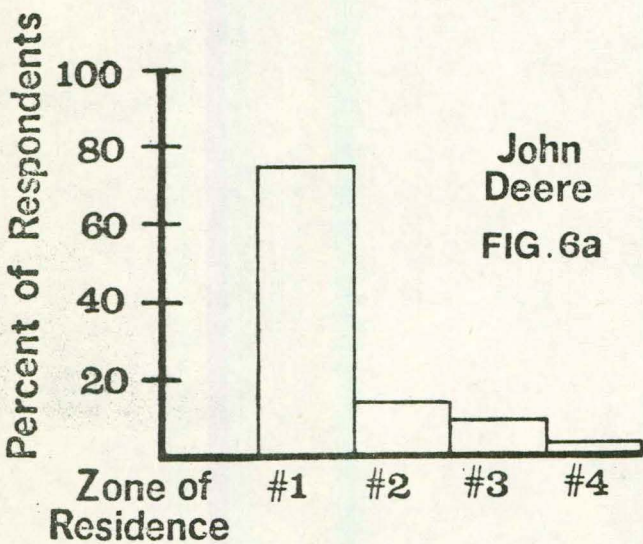
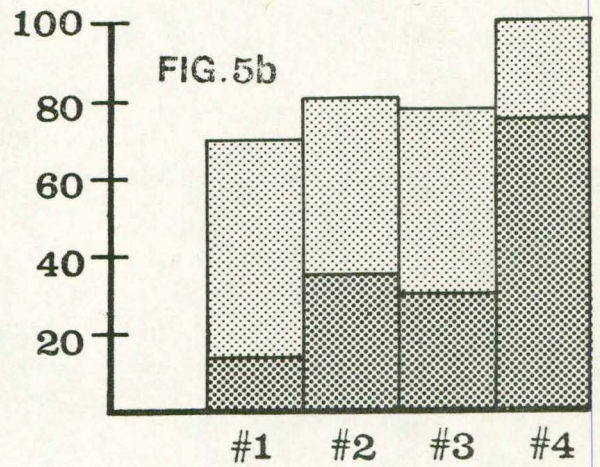
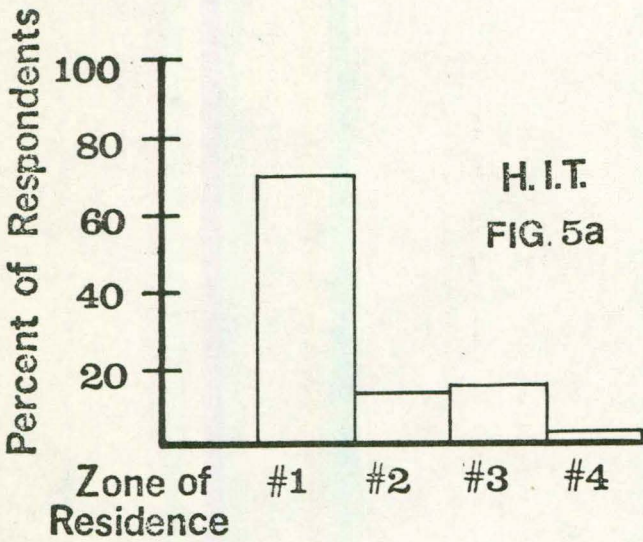
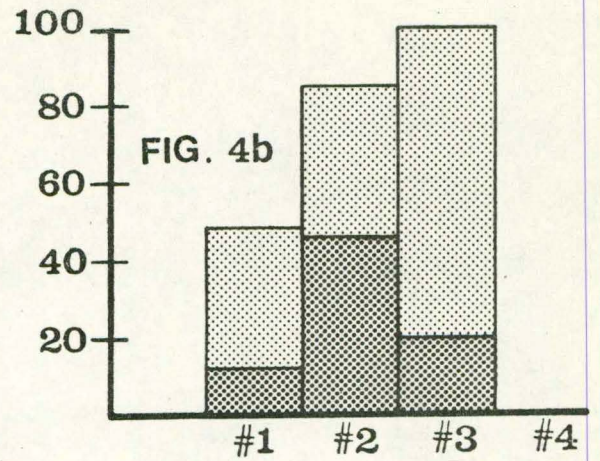
- #1 - Fewer than 10 miles
- #2 - 10 to 20 miles
- #3 - 20 to 30 miles
- #4 - Over 30 miles

- Already Carpooling
- Interested in Carpooling
- Already Carpooling or Interested in Carpooling

Employee Residences/Zone



Carpooling Interest/Zone



Zone #1 - Fewer than 10 miles
 #2 - 10 to 20 miles
 #3 - 20 to 30 miles
 #4 - Over 30 miles

Legend:
 [Cross-hatched] Already Carpooling
 [Dotted] Interested in Carpooling
 [Diagonal lines] Already Carpooling or Interested in Carpooling

In Waterloo, Rath Packing (Figure 2a) shows a similar local orientation. The personnel department estimates that ten to fifteen percent of its employees commute from out-of-town. Survey results roughly corresponded to this estimate since the Zone #2 respondents constituted about eight percent of the sample. An unexpected result was that no responses were received from anyone with residences in Zones #3 or #4. Rath Packing is the second largest industry in the area capable of attracting employees from considerable distances but the survey results show that Rath is primarily a local employer. The small sample size (3%) could account for this unexpected employment profile because it is highly probable that there were many residents from Zones #3 and #4 who simply did not return the survey.

Viking Pump, Inc. (Figure 3a) and Chamberlain Company (Figure 4a) both indicate moderate regional influence. They are moderately-sized firms which draw most of their employees from the immediate area and a few employees from distances over 20 miles. The distribution figures for Viking Pump are probably quite accurate since our sample is over 50 percent of all employees; while for Chamberlain, the sample size is about 25 percent, still large enough to be fairly reliable. On the strength of these results, it seems that both of these firms are predominantly local employers, but with moderate regional influence.

Figures 1a through 6a show in each case that the greatest number of respondents lived in Zone #1. The declining stair step pattern of each employment profile reflects decreasing population density as distance from Waterloo increases and the decreasing attraction of employment in Waterloo as commuting time increases.

Spatial Distribution of Present and Prospective Carpool Patrons

Figures 1b through 6b and Table IV were constructed to determine whether or not any conclusions could be made regarding the carpooling interest of short and long-distance commuters.

For this purpose, Zones #1 - #4 were again used to roughly categorize the residences of employees in relation to their job sites. Information from other responses on the questionnaire revealed within each zone the proportion of employees with residences in that zone who were interested in carpooling or who already were carpool patrons.

The stair step patterns of Figures 1b - 6b tend to reverse the descending pattern common to Figures 1a - 6a. That is, even though the absolute number of employees per zone decreases with distance (Figures 1a - 6a), the percentage of employees interested in carpooling tends to increase in the zones representing greater distance from the center point of the metropolitan area.

Employment profiles for all six employers indicate that persons living over 10 miles from their job location are more likely to be carpooling patrons than persons living less than 10 miles. Unfortunately, the sample size is very small for the outlying zones of every employer except John Deere.

(See Table III.) Therefore, no firm conclusions can be drawn; but the data seem to support the hypothesis that people are more inclined to carpool if they live far from work than if they live close-in.

SPATIAL DISTRIBUTION OF CARPOOLING INTEREST
TABLE IV

	<u>Zone #1</u> <u>0-10 miles</u>	<u>Zone #2</u> <u>10-20 miles</u>	<u>Zone #3</u> <u>20-30 miles</u>	<u>Zone #4</u> <u>over 30 miles</u>
U.N.I. Total Returns	135	5		
Interested	52 (38%)	3 (60%)		
Already Pool	22 (16%)	2 (40%)		
Rath Total Returns	133	11		
Interested	55 (41%)	7 (63%)		
Already Pool	27 (27%)	3 (27%)		
Viking Total Returns	315	54	24	
Interested	77 (24%)	9 (17%)	5 (21%)	
Already Pool	74 (23%)	24 (24%)	9 (37%)	
Chamberlain Total Returns	173	24	20	
Interested	61 (35%)	9 (38%)	4 (20%)	
Already Pool	22 (13%)	11 (46%)	16 (80%)	
H.I.T. Total Returns	137	26	30	4
Interested	68 (50%)	12 (46%)	14 (47%)	1 (25%)
Already Pool	29 (21%)	9 (35%)	9 (30%)	3 (75%)
John Deere Total Returns	2,711	503	354	99
Interested or				
Already Pool	1,733 (64%)	443 (88%)	314 (89%)	78 (79%)
(Combined)				

Existing Carpools

The number of respondents already sharing rides to each location was not high but was at least encouraging. According to the questionnaire returns, 7.5% of the total number of employees surveyed were already in carpools.

These veteran carpoolers represented a rich source of factory support for the project and provided established groups to absorb new persons who did not want to initiate their own carpools but who were interested in sharing rides with others.

Table II indicates that the average occupancy of existing carpools is around 2.5 persons for most plants. John Deere and Chamberlain Corporation however, revealed an average occupancy of 3.4 and 3.8 persons respectively. A higher proportion of vanpools and large station wagon carpools at these firms apparently increased the average occupancy figures.

A number of John Deere employees ride in charter buses. On their own initiative, employees clustered in outlying areas decided to charter buses so that they could ride to work more cheaply and in greater comfort. Occupancy of the buses ranges roughly between thirty and fifty. The charter buses have been in operation for a number of years and have been very successful. If these people were added to the 1,353 reported carpoolers, the percentage of people sharing rides to work would jump significantly.

Employer Incentive

Support from management personnel is essential for the success of a carpooling program conducted with the survey technique utilized in this project. Intra-factory promotional activity and distribution of questionnaires during working hours require definite space and time commitments from the employer.

Management is also in a position to establish positive incentive structures or negative sanctions to promote the formation of carpools. Particularly in reference to preferential parking policies, employers have a powerful tool at their disposal for affecting the driving habits of their employees. Incentives in the form of reduced fees or reserved lots close to the employment center are especially facilitated by the presence of a highly structured parking system in a limited space situation.

All of the employers contacted in this study were urged to provide some form of incentive structure. Some found parking incentives to be useful.

University of Northern Iowa

The University of Northern Iowa presently has a highly structured parking system. Special stickers and controlled parking lot facilities limit access to various locations on the campus.

In 1974, an additional financial incentive was offered to promote carpooling. When a group of employees share driving and riding, only one full-price parking permit was required. The carpool received one mobile

parking permit sticker to display in whichever car was driven and each extra rider paid only \$1.00 for yearly parking privileges.

This incentive system was already planned for the fall of 1974 before UNI decided to participate in the demonstration project, but it illustrates a management technique which complements INRCOG's matching service well.

Rath, Chamberlain, and Viking Pump

Parking is not a problem at these plants and no incentive program for carpoolers is being planned by the management at this time.

John Deere

The Waterloo John Deere plant does have very limited parking and high congestion during shift changes, so management personnel there are particularly interested in reducing the number of cars around the plant. Some controlled lots do exist in critical parking areas, but as yet none are reserved for carpools. The management is aware that parking incentives can greatly increase the attractiveness of carpooling, and they are considering reserved parking areas for carpoolers in the future.

COMPLETION OF CARPOOL MATCHING LISTS

Delays in the Project

Nearly one year had elapsed between the time the original survey was taken and the time the carpool lists were received by the interested individuals. The carpool information had been collected in July 1974, and the participants received their individual lists in May 1975. Delays were caused by problems with the computer program. The INRCOG project was the first time that the FHWA carpool matching program was used by the Iowa Department of Transportation and numerous programming problems were encountered. Additionally the program required a considerable amount of computer time and the program could only be run on weekends when there were no other demands on the computer. As a result one week elapsed between the time a correction was made and the time the program was run. A second delay was caused by the format of the print-out. The format required an envelope with an oversize window for the individual's entire address to be visible. The envelopes had to be custom made causing another delay in mailing the lists.

Distribution of Individual Carpool Lists¹

A list of potential carpool partners was mailed directly to each respondent who wished to be included in the program. Before the lists were mailed during May 1975, carpool posters of the same design as those used in the initial questionnaire were distributed to the participating

¹See Appendix V for an example of the lists.

employers for posting. Since the list was self-explanatory, no other advertising promotions were undertaken at the time of the mailing.

When an individual received his list, INRCOG's service was completed. It was then up to the employee to get in touch with the people on his/her list to join an existing carpool or to form a new one.

FOLLOW-UP

Follow-up Survey

A questionnaire¹ was mailed in September 1975 to individuals who responded to the initial survey during the summer of 1974. The purpose of the survey was to evaluate the effectiveness of the carpool project and to identify the major reasons carpools were not formed. A total of 3,940 survey postcards were mailed and 695 persons (17.6%) returned the postage-free reply card.

From the results of the survey, as shown in Table V, the project appears to be less than a total success. Only 63 out of 630 respondents actually contacted anyone on their list. Of this 63 only 19 persons were successful in joining an existing carpool or in forming a carpool and 10 of these indicated that they are no longer in that carpool.

Major reasons cited by the respondents for not forming a carpool include inconvenience, program matching problems, and irregular hours. Two frequently cited reasons for not forming a carpool were waiting time and not having a car during working hours. An important reason was irregular hours and overtime, this may be a more serious problem than first appears since this reason was not listed and respondents had to write in this response. Computer matching problems and the delay in returning the completed lists was another serious impediment to carpool formation.

¹See Appendix VI.

FOLLOW-UP SURVEY¹ RESULTS

Table V

		<u>Yes Responses</u>	<u>Total Responses</u>
1.	In a carpool at time of first questionnaire 38%	263	695
2.	Contacted anyone of the carpool list 10%	63	630
3.	a. Started or expanded a carpool 15.2%	98	641
	b. Still in that carpool	200	508
	c. Average size of carpool is 3.35 persons per car	NA	NA
4.	a. ----- ²	---	---
	b. People lived too far away	116	597
	c. Carpooling requires too much travel time	74	597
	d. Carpooling requires too much waiting time	95	597
	e. List was out-of-date	101	597
	f. Without car during work is too inconvenient	69	597
	g. Other		
	1. Irregular hours or overtime	66	597
	2. No matches in home grid	16	597
	3. Obvious program error	10	597
	4. Carpool currently full	20	597
	5. Miscellaneous	30	597
5.	a. Contacted anyone on the list and started or expanded a carpool from that list	19	589
	b.. Still in that carpool	9	19

¹See Appendix V for example of survey form.

²Question excluded due to ambiguous wording.

Several persons listed too much travel time , an out-of-date list, and obvious program errors .

A hopeful sign in the survey results was that 98 respondents indicated that they had started or expanded a carpool. Obviously many of these carpoolers formed pools without the help of the matching program. This indicates that there is interest in carpooling and had problems not been encountered in the program the number of successful carpool formations would probably have been much greater .

COMMENTS AND RECOMMENDATIONS

Recommendations

1. A survey of all of a firm's employees does not seem to be the most efficient approach for initiating a carpooling program. In most cases, carpooling is possible for only a minority of employees due to residential patterns, scheduling problems, and interest. As evidenced by the responses in the follow-up survey if work hours or overtime patterns are irregular, carpooling is almost impossible. If residential density is very low, carpooling is also difficult. In addition, many people must run errands after work, and some people indicate that they will carpool only if there are no unnecessary stops enroute. Unless it is known beforehand that there is considerable desire for carpools and conditions are favorable, (i.e., regular shifts, high residential density and/or clusters of employees commuting in from small towns, parking problems at the plant, etc.) the voluntary ^{*} sign up method is a more efficient means of information gathering. We still recommend a ^{*} good promotion campaign before instituting a carpool program, but gathering carpool information on a voluntary basis using a ^{*} locator board technique should avoid unnecessary paper shuffling.
2. The carpool matching system developed by FHWA has serious shortcomings in rural areas. The program was developed for very large

urban/suburban areas. The ^{10. To restriction} 4 to 1 grid size ratio¹ of regional map to city map, works fine in such areas. In the midwest, however, the situation is not comparable. High density employment and residential areas co-exist with very low density rural areas. People are willing to drive 40 or 50 miles to work in regional employment centers. This demands a small grid size in urban areas to allow a manageable carpool zone, and a large grid size in the region to cope with the low population density and long commuting distances. The FHWA program limits the user to a maximum of "49" on the grid scale, with only odd numbers permitted. Using four standard land sections (4 square miles) as the regional grid size and one standard section (1 square mile) as the in-town grid size limits the effective radius of the project to $24\frac{1}{2}$ miles from the center of the employment area. A larger grid is desirable in the region, but the 4 to 1 requirement would necessitate too large an in-town grid to be effective for carpool matching. Although people living outside of the grid area can code the point at which they enter the map, a larger regional radius is desirable. Judging from the responses in the follow-up survey, the in-town grid size was probably too large since many individuals cited distance and travel time as the reasons they did not form carpools. Any changes to reduce the size of the in-town grid cell would reduce

¹See Appendix I

the regional coverage of the program. The FHWA program has very serious limitations in the Waterloo area.

3. The grid method of locating addresses is adequate for carpooling purposes, but has the disadvantage of cutting across natural carpool clusters. This can be seen graphically if addresses from returned questionnaires are plotted on a wall-sized map (with block numbers) and color code for time.

(Incidentally, this is not a bad manual technique for forming suggested carpool groups.) Plotted addresses will tend to cluster in residential areas and along routes to work. The best possible carpool groups become obvious. If a grid system is arbitrarily laid over these plots, many natural clusters will be in different grids. Although the FHWA program partially compensates for this problem in low density areas by searching adjacent grid cells if fewer than eight carpoolers are located on the first search, this doesn't compensate for breaking up some optional carpool clusters. A minimum distance type program would better identify natural carpool groups. The program would then seek out residences within a prescribed radius of each other as possible carpool groups. Potential carpoolers could actually mark the location of their residence and work place on the questionnaire maps. The analyst could then either overlay a fine-grid system on the map to assign cartesian coordinates to each point, or a scanning program could be used. The computer technology

exists to be more sensitive to residential patterns than is possible with a grid overlay system. Program updates should consider the possibilities.

4. Unless it is known that a firm has critical transportation problems and, therefore, a strong built-in incentive to carpool, a commitment to provide some carpool incentive should be obtained from the management. The success of a carpool matching project is very sensitive to employee incentives. Spending time with management in advance of the plant survey in order to develop an appropriate incentive program will insure maximum employee response to the program. If a firm has only a marginal interest in carpooling, a voluntary sign-up system as in recommendation #1 would be better than a full scale plant survey. If a firm will commit itself to an incentive program, the survey will, no doubt, be warranted.
5. The carpool matching program must be fully operational before a project is undertaken. The delay caused by programming problems probably severely restricted the effectiveness of the project. Changes occurred in job location, work hours, and home location for many people during that time and the effect of the advertising promotion had diminished. It is difficult to measure the full effect of the delay, a number of respondents indicated that their list was out-of-date when they received it, however there is no way to estimate the number of potential

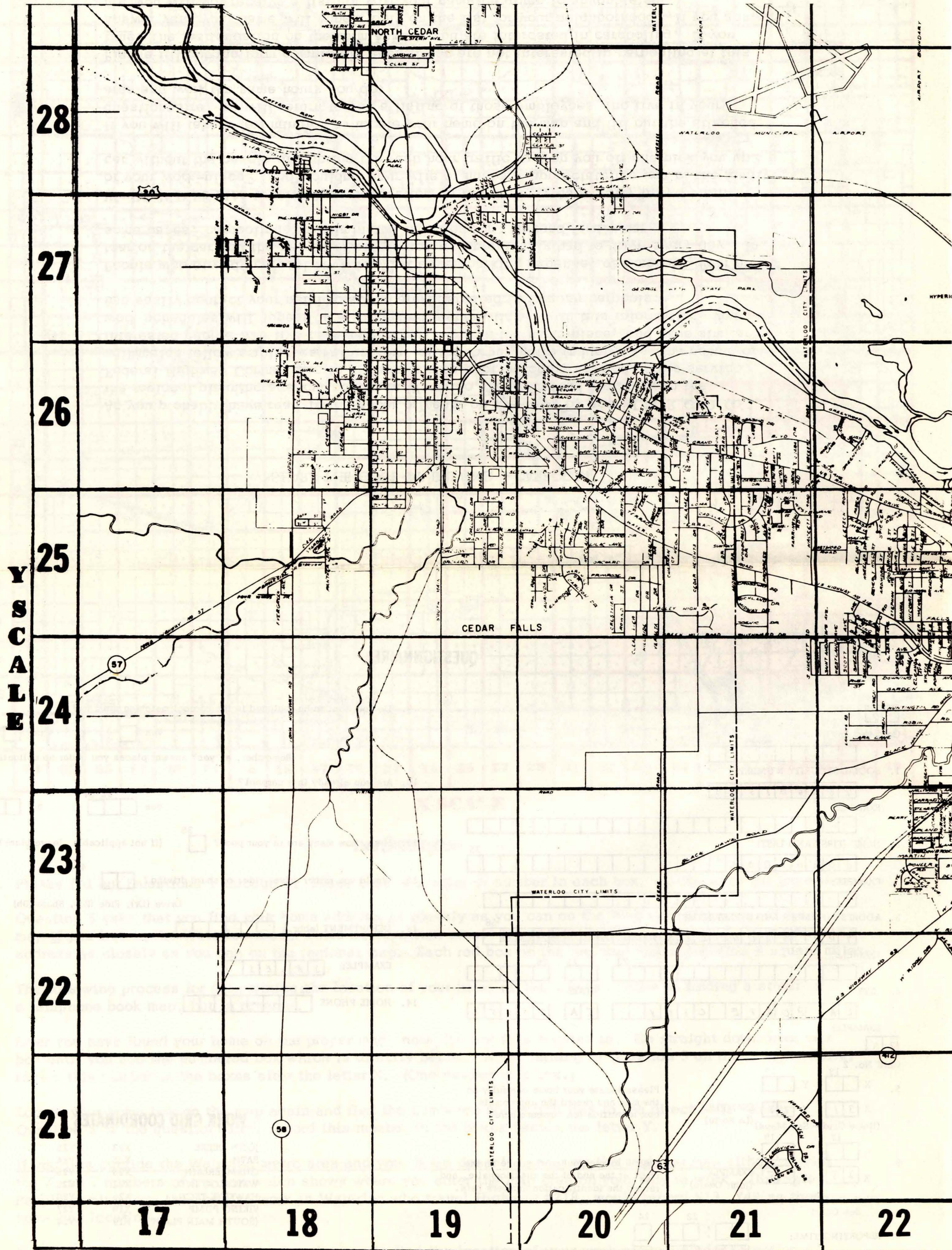
carpoolers who lost interest between the time of the advertising promotion and the time they received their list.

Comments

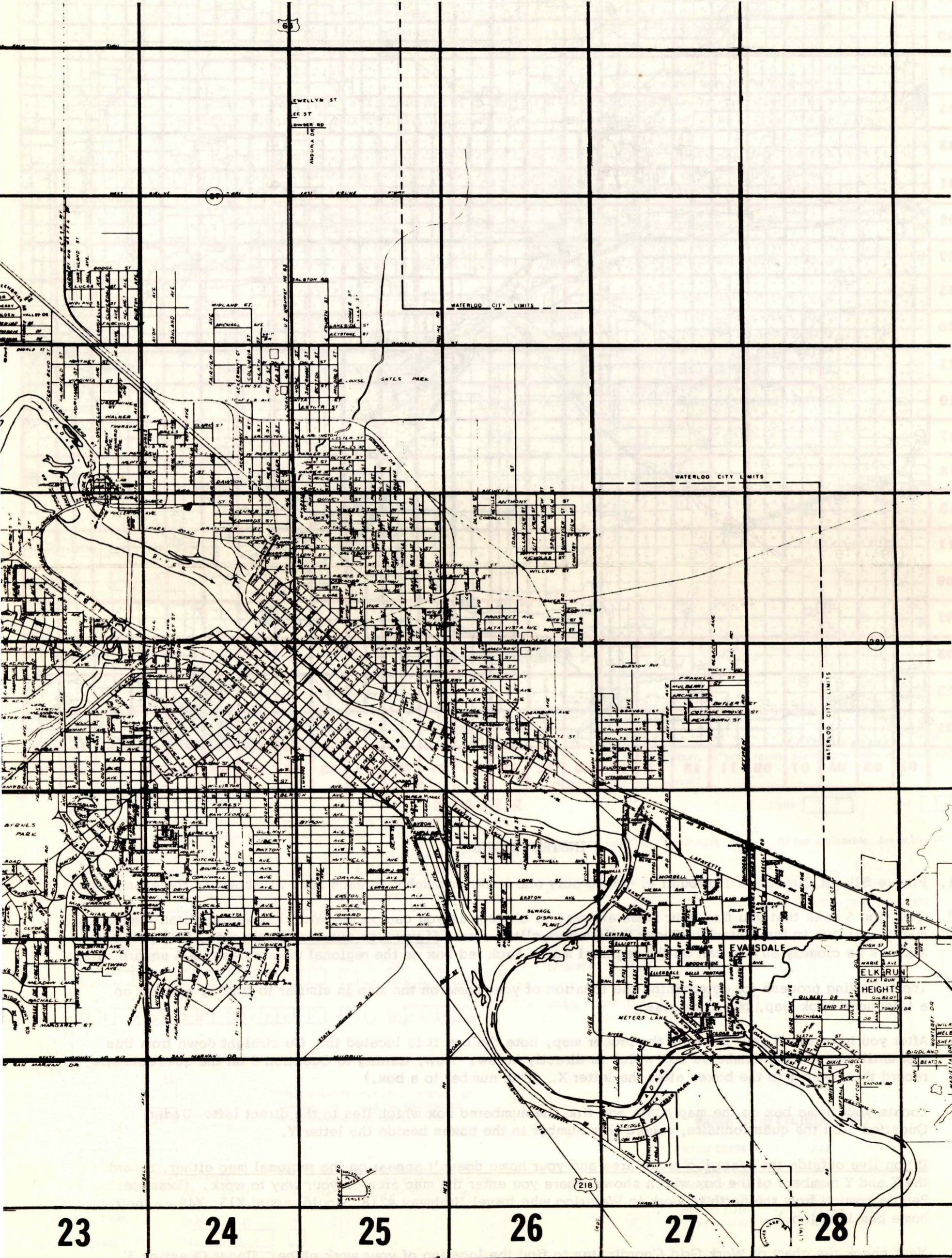
1. From employers it was discovered that a "computer backlash" is developing. Some people are tired of "mistakes" made by computerized administration systems and therefore refused to participate in the carpool project. Instead of a selling point for efficiency, computer processing is a stumbling block to maximum participation.
2. Word was received from one firm that employees were suspicious of the need for their social security number on the questionnaire. It was explained that the social security number is necessary to link the pair of computer punch cards corresponding to each questionnaire. The explanation was satisfactory, but again evidences suspicion computers and their information processing capability. In a time when the protection of individual privacy is an issue, it might be wise to substitute another system of linking the punch cards.

APPENDIX

WATERLOO MET

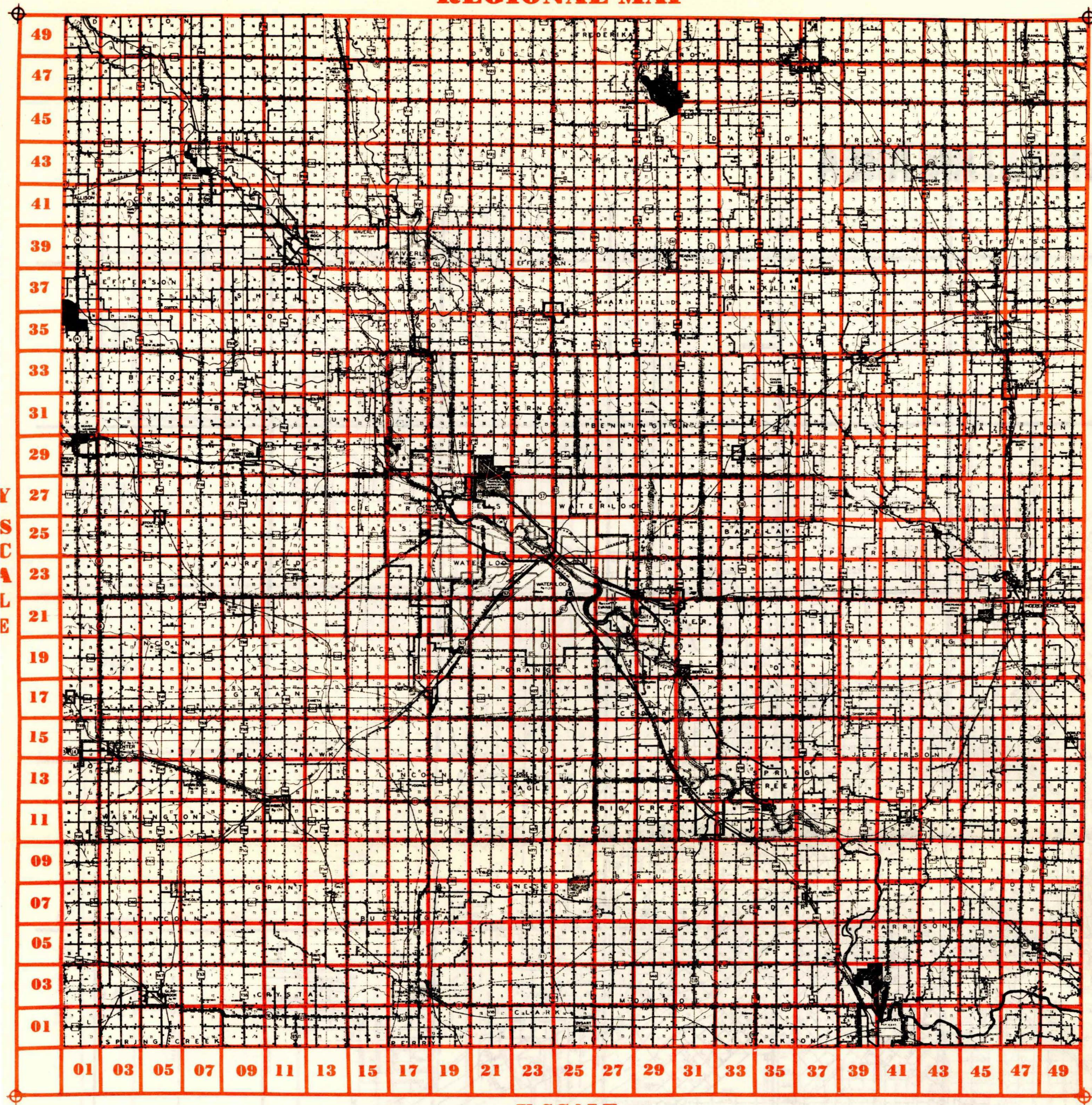


OPOLITAN AREA



ALE

REGIONAL MAP



X SCALE

INSTRUCTIONS

1. Please fill out Questions 1 through 4. Place only one letter or number in each box, as shown in the examples.
2. Question 5 asks that you find your home address as closely as you can on the Waterloo Metropolitan Area map if you live in the Waterloo-Cedar Falls metropolitan area. If you live outside of this area, find your home address as closely as you can on the regional map. Each red box on the regional map represents 4 square miles.

The following process for determining the location of your home on the map is similar to finding a street on a telephone book map, but in reverse.

After you have found your home on the proper map, note the box it is located in. Go straight down from this box until you see the numbered box which is directly below. Now, turning to Question 5 on the questionnaire, record this number in the boxes after the letter X. (One number to a box.)

Locate your home box on the map again and find the numbered box which lies to the direct left. Under Question 5 on the questionnaire, record this number in the boxes beside the letter Y.

If you live outside the Waterloo metro area and your home doesn't appear on the regional map either, record the X and Y numbers of the box which shows where you enter the map area on your way to work. (Example: People coming from the north to work in Waterloo who travel Highway #218, would record X13, Y49 as their home box location.)

3. Next check the chart of Work Grid Coordinates to find the location of your work place. Under Question 6, record the numbers of your work place in the proper boxes.
4. Record your work hours under Question 7 and 8. Fill in Questions 9 through 14, as they apply to you.

SHARE THE COST OF DRIVING - CARPOOL!

As you probably have read in the paper or heard on the news by now, I. N. R. C. O. G., the regional planning agency located in Waterloo, has received a grant from the Federal Highway Commission to undertake a carpool matching service. This service will match fellow employees within some of the larger metro industries. The names of interested people who live near each other, work in the same place, and have similar work schedules will appear on a suggested carpool list. With this information, you can easily contact your neighbors who are interested in forming carpools.

People who already carpool have found it saves parking expense, gas money, wear and tear on the car and the nerves of the person who previously had to drive every day. In some cases, carpooling has eliminated the need for a second family car.

Wouldn't it be nice to have less congestion on the streets, especially in the vicinity of your work-place? And wouldn't your wife or husband appreciate the use of the family car without the hassle of fighting the rush hour traffic to drop you off and pick you up?

If you will take a few minutes to locate your home on the map and fill out the attached questionnaire, we will return to you a listing of those employees who live in your area and work the same hours you do.

Please fill out the form completely even if you are not interested in carpooling at this time. The last question on the form asks if you are interested in carpooling. If you answer yes, your name will appear only on the list for your neighborhood. If you answer no, you will not receive a list nor will your name be given to anyone else.

Even if you are already in a carpool, you might answer yes and enlarge your membership or keep the list for future use should someone drop out of your carpool.

Please return this filled out form within a week so that we may get a carpool list back to you very soon.

QUESTIONNAIRE

1

1 A

Card No. 1 11

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1. SOCIAL SECURITY NUMBER

4	8	2	6	0	1	5	4	3
---	---	---	---	---	---	---	---	---

EXAMPLE:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

2. NAME (FIRST AND LAST) 35

J	O	H	N	D	O	E															
---	---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

EXAMPLE:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

3. ADDRESS (NUMBER AND STREET NAME) 58

4	0	1	M	A	I	N	S	T	R	E	E	T										
---	---	---	---	---	---	---	---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--

EXAMPLE:

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4. CITY STATE ZIP

L	A	P	O	R	T	E	C	I	T	Y	I	A	5	0	C	5	1
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

EXAMPLE:

2 A

Card No. 2

5. X 13 Y 15

X 31 Y 11 EXAMPLE
(Home Grid - See Maps) (La Porte)

6. X 17 Y 19

X 23 Y 25 EXAMPLE
(Work Grid Number) (John Deere)

See Chart

7. REPORTING TIME:

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Example for 8:00 a.m.

8. DEPARTING TIME:

--	--

 :

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0	4
---	---

3	0
---	---

P

Example for 4:30 p.m.

9. Do you want to be included in the carpool matching program?
yes no

(Remember, a "yes" answer places you under no obligation)

10. Are you already in a carpool?
yes

--	--

32-34 no

--	--

11. If so, how many are in your pool?

--

38 (If not applicable, leave blank)

12. Would you rather drive, ride, or share driving?

--	--

41
Drive (Dr), Ride (Rd), Share (Sh)

13. DEPARTMENT (abbr.) 44

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EXAMPLE:

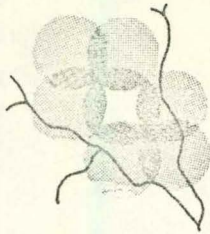
J	A	L	E	S
---	---	---	---	---

14. HOME PHONE 52

			-					
--	--	--	---	--	--	--	--	--

WORK GRID COORDINATES

JOHN DEERE	X23	Y25
RATH	X25	Y24
CHAMBERLAIN	X25	Y26
WATERLOO IND.	X22	Y25
HAWKEYE TECH.	X25	Y20
VIKING PUMP	X19	Y27
(SOUTH MAIN PLANT)	X19	Y24



IOWA NORTHLAND REGIONAL COUNCIL OF GOVERNMENTS

Suite N; Russell Lamson Building; 209 West Fifth Street; Waterloo, Iowa 50701; Telephone: 319-235-0311

Dear Sir:

We invite your organization to participate in a city-wide carpool matching program. President Nixon, in a memo dated June 29, 1973, emphasized the need to be energy minded and encouraged ".....greater use of car pools and mass transit by your employees." Carpools, with no investment in new equipment, conserve energy and reduce individual commuting expenses.

The benefits are obvious--savings to the employee for gas, oil, wear and tear, parking fees, time, and perhaps even eliminating the need for a second car. The social benefits would be cleaner air, energy conservation, and fewer accidents. Both the employer and the employee stand to benefit from more relaxed travel.

The Federal Highway Administration has consented to direct an effort to accomplish this. They will use computer matching techniques to process data collected from employees. Each person will receive a listing of names, addresses, and phone numbers of all other people who live nearby and have a similar work schedule. Participation is voluntary, but your full support in urging your people to participate is requested.

The agency coordinating this project is the Iowa Northland Regional Council of Governments. We urge you to support this project and ask that you do all you can to help make it successful.

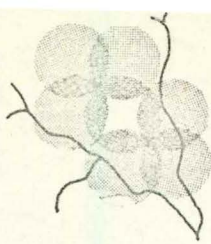
Very truly yours,

Jon T. Crews

Jon T. Crews
Mayor of Cedar Falls

Leo P. Roof

Leo P. Roof
Mayor of Waterloo



IOWA NORTHLAND REGIONAL COUNCIL OF GOVERNMENTS

Suite N; Russell Lamson Building; 209 West Fifth Street; Waterloo, Iowa 50701; Telephone: 319-235-0311

Dear Sir:

We are very pleased at the success of the Iowa Northland Regional Council of Governments carpool matching program in Waterloo and Cedar Falls. Overall, nearly 25% of the distributed questionnaires were returned and about two thirds of these were favorable responses. Considering all of the obstacles to carpool formation, this is a very encouraging response. The administration of Hawkeye Institute of Technology, Hawkeye Tech employees and students are to be commended.

Even though the first shock of the energy crisis has passed, that crisis made it clear that no one can afford to ignore conservation measures. Joining a carpool is a small but definite step toward energy conservation and toward preserving the whole environment. It is an effort that many people can make with a little planning to both save energy and reduce pollution.

We continue to support carpooling efforts and hope that Hawkeye Institute of Technology will keep the carpool matching system updated. Since the matching system has been started, efforts should be made to maintain it as long as a service is provided for employees and students.

Thanks again for the fine cooperation we received in this undertaking.

Sincerely,

Mayor Leo P. Roof

Mayor Jon T. Crews

RADIO • TV CONTINUITY

Client I.N.R.C.O.G.

Date

Station

Program

Special Instructions 30 second radio commercial
Traffic trauma

FRANK COOPER
ADVERTISING, INC.

WATERLOO, IOWA 50704
PHONE: 319-232-2032

SFX; heavy traffic with horns
blaring and tempers flaring.
Disgruntled male driver talking
to himself:

Female Announcer:

Driver:

Female:

Driver:

Female:

Driver:

Female:

SFX: Beep, Beep!

Man, look at that traffic. I'll never get to work
on time much less find a place to park.

There's a way to reduce traffic and parking con-
gestion, you know.

What's that?

Join a carpool. If everyone rode to work in a
carpool, there'd be only half as many cars on
the road.

But how do I find one?

Simply complete the questionnaire handed you by
your employer the week of July 8th. A computer
will arrange one that's convenient.

Let's pool together and reduce traffic, huh?

You're nobody's pool, Fred.

RADIO • TV CONTINUITY

FRANK COOPER
ADVERTISING, INC.

WATERLOO, IOWA 50704
PHONE: 319-232-2032

Client I.N.R.C.O.G.

Date

Station

Program

Special Instructions: 10 second T.V. commercial
Traffic trauma

Telephoto shot bunching cars together at a busy stoplight during rush hour.

Tired of traffic and parking congestion? Join a carpool and reduce traffic.

Super: "Let's pool together" artwork.

Let's pool together and stop congestion.

:10 second T.V. commercial
Beat the high cost of gasoline.

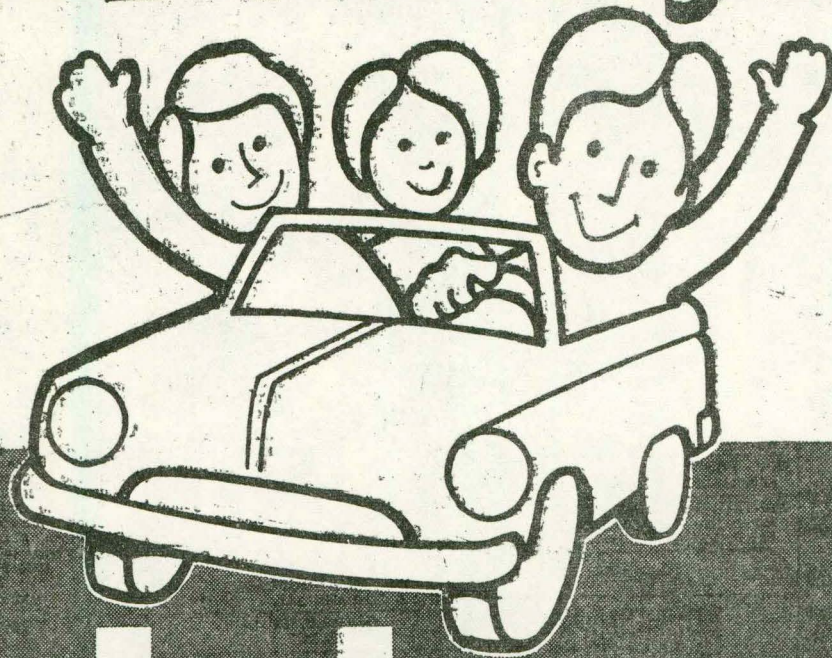
Long tracking shot of car full of carpoolers pulling up to a stop. Two of the carpoolers get out.

Tired of spending so much for gasoline? Join a carpool and share the cost.

Super: "Let's pool together" artwork.

Let's pool together and save gas.

let's **POOL** together



join a carpool today

EMPLOYERS INTERESTED
IN FORMING CARPOOLS
FOR THEIR EMPLOYEES
SHOULD CONTACT THE
IOWA NORTHLAND RE-
GIONAL COUNCIL OF GOV-
ERNMENTS.

235-0311

Reproduction of a Three Color Poster Used in the Advertising Promotion

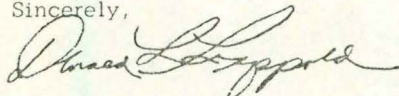
Dear Employee:

In the summer of 1974, you and your fellow employees were asked to fill out a carpool information survey. From the results of that initial survey, interested people were provided with a list of potential carpoolers in their area. The aim was to help you make contacts to set up new carpools or to expand existing carpools. It is hoped that sufficient time has elapsed for you to pursue your original interest in the program.

Attached is a follow-up survey designed to determine whether or not the information provided to you was useful in forming or expanding carpools. We are especially interested in determining whether or not the carpools formed were of long-lasting duration. Your comments can help us pinpoint the problems you encountered in establishing and maintaining carpool groups. Please answer all questions.

Please take a few minutes to answer the questions. A continuing program to conserve energy and to ease congestion on our metropolitan streets and highways depends on your cooperation.

Sincerely,



Donald L. Lippold
Chairman, Iowa Northland Regional Council of Governments

Detach Here



CARPPOOL SURVEY

DIN - - - - -

1. Were you in a carpool at the time of the first questionnaire? yes no 9
2. After you were mailed a list of names, did you contact anyone on the list in an attempt to start or expand a carpool? yes no 10
3. Did you actually start or expand a carpool? yes no 11
Are you now still in that carpool? yes no 12
How many persons are in the carpool? number of 13
persons
4. If you did not start or expand a carpool or if your carpool has disbanded, why?
 - a. I never received a list of people in my area. yes no 14
 - b. The people on my list lived too far away. yes no 15
 - c. Carpooling required too much travel time. yes no 16
 - d. Carpooling required too much waiting time. yes no 17
 - e. The list I received was out-of-date. yes no 18
 - f. Being without a car during working hours was too inconvenient. yes no 19
 - g. Other (Please Specify) _____ 20

Comments:

23