

PRESENCE OF FARM AND NON-FARM PRODUCED NUISANCES WITHIN
THE URBAN FRINGE OF EUGENE AND SPRINGFIELD, OREGON

by

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PRESENCE OF FARM AND NON-FARM PRODUCED NUISANCES WITHIN
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ABSTRACT. The loss of important agricultural land is presently a highly significant resource problem. Urbanization processes, such as subdivision development in urban fringe areas, is a primary factor in converting agricultural land to urban land. The State of Oregon has addressed this issue by requiring all cities and urban counties to establish urban growth boundaries (UGB). The UGB's purpose is to contain urban expansion and preserve agricultural land. Although UGB's have proven effective in containing urban growth, this study found incidents produced by urban land uses to have affected urban fringe agricultural operations. However, average farm size and the amount of income produced by each farm indicated most farms were not commercial operations. Therefore, an adequate buffer may already exist.

INTRODUCTION

The replacement of agriculture by suburbanization and non-farm rural residential housing is more than a loss of a serene pastoral landscape, it is immutable loss of scarce resources.

-Ian McHarg

The conversion of prime agricultural land to non-agricultural uses is a resource problem of national significance, with long term negative consequences. Good farm land is a finite resource necessary for our survival (Coughlin, 1981).

Urbanization processes have two major effects on the loss of farm land at the rural-urban fringe: direct conversion of agricultural land to urban uses and premature idling of farm land due to urban influences (Plaut, 1976). Between 1967 and 1975, the average annual loss of more than three million acres of agricultural land has been attributed to the direct conversion to urban uses (Coughlin, 1981). In a study of land markets at the urban fringe of four United States cities, Brown and others (1981) found average farm parcel size to vary directly with distance from urban expansion. In areas remote from urban expansion more than a third of the land was found to be in parcels larger than 200 acres, yet where development pressure was greatest, fewer than one in ten parcels was larger than 200 acres and more than 40 percent of all parcels were less than ten acres. Ten acre parcels are too small for most commercial farms (Toner, 1978).

Many factors have contributed to farm land loss, including

the creation of nuisances and incidents, by farm and non-farm uses in fringe areas. [Nuisance is defined as a substantial and unreasonable interference with the use and enjoyment of private property or with a public right common to all (Law of Torts, 1971). Note: In this study the word "nuisance" refers to externalities produced by agricultural activity and which affect urban areas and the word "incident" refers to externalities produced by subdivision residents and which affect farm parcels.] These nuisances result when small lot residential developments meet farming activities. New "rural" dwellers appreciate the peacefulness and enjoyment of expansive views and open space, but may dislike the noise, dust, chemical spraying, odors and field burning associated with normal farming practices. Farmers, on the other hand, are subjected to increased trespassing, molestation of their stock by dogs, theft, vandalism, refuse and traffic on local roads (McDonough, 1982; Thompson, 1982). Continued nuisance occurrence often results in farm sales and additional small lot residential construction. Federal, state and local legislation and policy have recently begun to seriously address this issue and found some success. The State of Oregon has been at the forefront of this effort.

Oregon's Approach

Prompted by rapid population growth and haphazard development, Oregon's legislature passed Senate Bill 100 in 1973, which created a statewide yet locally controlled planning

program. Its purpose is to plan for anticipated growth with minimal sacrifice of the environment or the state's natural resources based economy and at the least cost to individuals, developers and governments (Leonard, 1983). The gubernatorial-ly appointed Land Conservation and Development Commission (LCDC), oversees program activities including 19 mandatory goals and recommended guidelines which direct local governments in the development and execution of required comprehensive plans.

Two of the 19 goals relate to agricultural lands: Goal three and Goal 14, which relates to urban growth management (LCDC, 1980). Goal three is designed to preserve and maintain agricultural lands by requiring establishment of exclusive farm use (EFU) zones and decision criteria for conversion of rural agricultural land to urbanizable land. Goal three guidelines recommend a separation of urban growth from agricultural lands by buffer or transitional areas of open space. Goal 14 provides for an orderly and efficient transition from rural to urban land use through establishment of urban growth boundaries (UGB) to identify and separate urbanizable land from rural land. Although Oregon cities and urban counties have managed to designate their urban growth boundaries and EFU zones, few have developed "buffer" or "transitional areas of open space." This has allowed urban uses to directly abut the UGB and has created unfavorable conditions, for agricultural uses.

OBJECTIVE

The research objective was to examine metropolitan Eugene-Springfield urban fringe areas and define the location, extent, and spatial distribution of farm/non-farm nuisances. Determining the geographic distribution of nuisances should assist planners in the development of a buffer area, along the UGB, to adequately separate farm and non-farm land uses. Research findings have verified the existence of nuisances and should provide planners with basic information to substantiate the need for a buffer. Buffer establishment should also strengthen the purpose of an UGB: to contain urban expansion and preserve agricultural land.

STUDY AREA

The cities of Eugene and Springfield, Oregon are located in Lane County at the southern end of the Willamette Valley (Figure 1). Wood and lumber products, agricultural products, and other heavy industrial activities are the dominant industries. Valley soils and climatic conditions allow for a diversified and abundant harvest of agricultural products (Lane County, 1982). Important crops, ranked by value of product, include grass and legume seed, vegetable and truck crops, field crops, and grains. Important animal husbandry activities include poultry, dairy, sheep, cattle, and calf operations (OSU Extension Service, 1983).

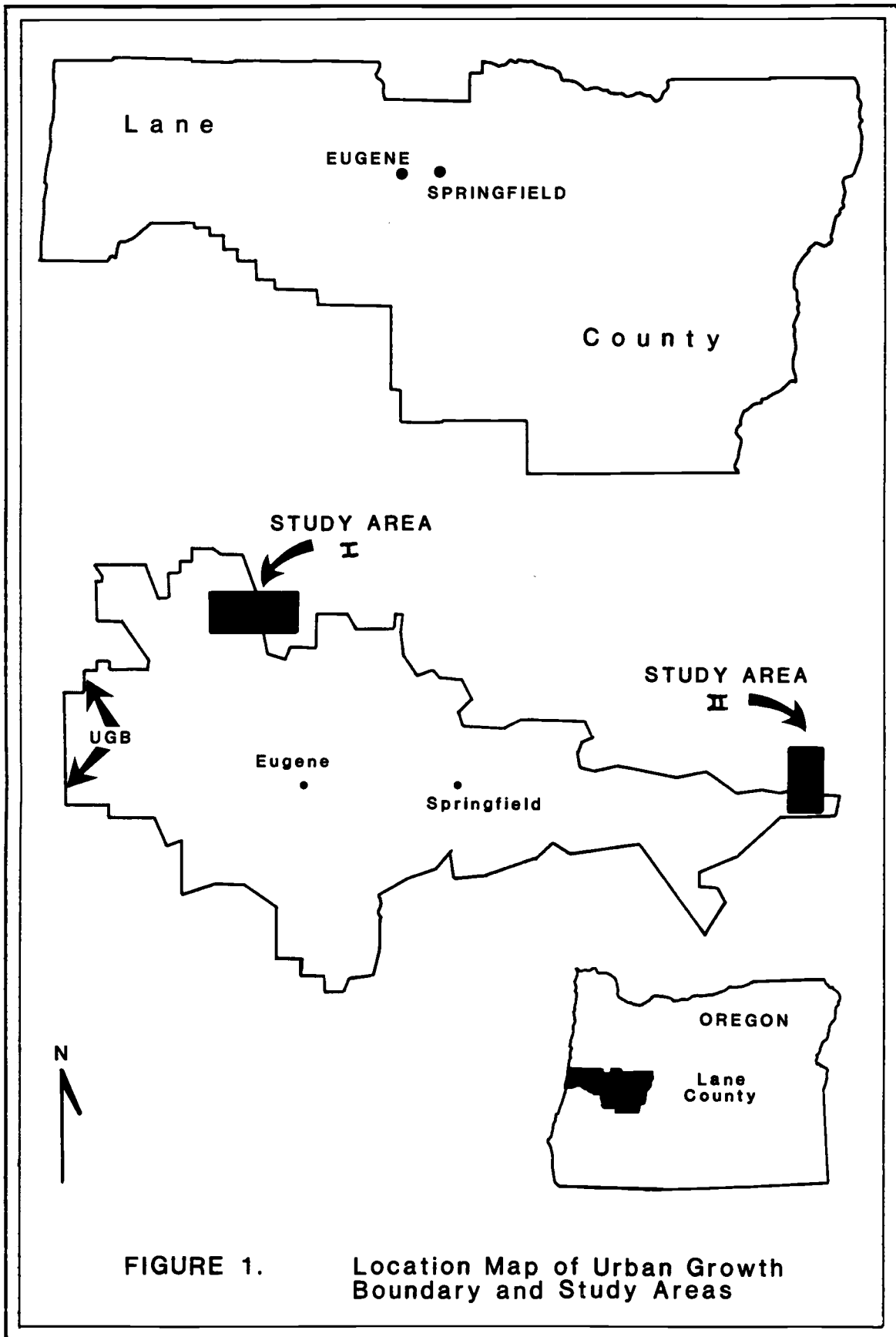


FIGURE 1. Location Map of Urban Growth Boundary and Study Areas

DATA COLLECTION METHODS

Data collection made use of existing information sources and original surveys to identify nuisances produced by farm and non-farm activities at the urban fringe. Estimation of nuisance significance was based on its severity and distance needed to mitigate its effects. Data sources included Lane County's computer based regional information system (RIS), a farm/non-farm telephone survey, aerial photos, cadastral maps, field reconnaissance and personal interviews of various public and private individuals knowledgeable of urban fringe areas. The RIS provided a variety of information, including computer plotted maps of the Eugene-Springfield metropolitan area. These maps displayed the UGB, Soil Conservation Service (SCS) classes I through VIII, all tax parcels, including platted and developed subdivisions and farm parcels, major land uses, and public right-of-ways.

Estimation of nuisance severity and of distance needed to mitigate its effects was accomplished through two primary means. The first consisted of a telephone survey questionnaire. Separate questionnaires were used for farm and non-farm respondents. The second means consisted of a RIS map plot of the study area showing subdivisions with existing and occupied residences, farm parcels, UGB, and the location of nuisances reported to police and sheriff agencies.

Lane County's RIS was used to generate maps, lists of numerical data, phone numbers, and other significant information. Its data banks include locational coordinates of every tax

parcel within the county and important parcel information such as number of dwellings, SCS soil type, acreage, etc. Abundant and detailed, yet easily accessed, the RIS information reduced the time needed for data acquisition.

Two study areas were identified within metropolitan Eugene-Springfield (Figure 1) using RIS map plots. Criteria for their selection included: (1) location abutting or generally within one-quarter mile of the UGB, (2) soils consisting of SCS soil classes I through IV (designated by LCDC as most important to agriculture), (3) agricultural activities identified as important to the local economy, by value of product, (4) proximity of a subdivision and (5) a designation in Lane County's Metro Area General Plan (1982) as important to agriculture.

Study Area I is located north of Eugene in an unincorporated area (River Road-Santa Clara), west of the Willamette River, north of Federal and Azalea Lanes, south of River Loop #2 and east of Marvin Drive. Land use west of the UGB is predominantly residential with some small scale farming. Farming is dominated by orchards, pasture and field crops on smaller lots. The slope is from Marvin Drive to the river (west to east).

Study Area II is located in northeast Springfield, west of North 70th Street, north of Cascade Street, south of the McKenzie River and east of North 61st Street. Land use south of the UGB is predominantly residential with one large (27.88 acres) commercial orchard north of Thurston Road. Pasture and wheat characterize the generally larger lots north of the UGB. The slope is from Cascade Street to the river (south to north).

After identification of study areas, each area was divided into three spatially defined subareas. These subareas were defined by distance criteria from subdivision development. Using a compass and ruler, subarea boundaries were identified at one-quarter, one-half, and three quarter mile distances from the subdivision. Each farm parcel was then assigned to a particular subarea, utilizing the criteria that at least 50 percent of the total acreage of the parcel was within the respective subarea boundaries. Parcels not entirely within the study area were eliminated from consideration.

Breaking the study area into subareas allowed for consideration of three ranges of distance: (1) parcels abutting or within one-quarter mile distance from a subdivision, (2) parcels within one-quarter to one half mile distance, and (3) parcels within one-half to three-quarters mile distance from the subdivision. Three-quarters mile was hypothesized by this author to be the limit of any significant nuisance effect between farm and subdivision development. Next, all parcels meeting these criteria were identified; 19 parcels were identified in Area I, and 18 in Area II. These parcels' owners then became the potential farm respondents for the survey.

Farm survey questions consisted of five major groups. Participants were asked how many years they had farmed in total and at their present location, and what size and type of farm they had. Farm categories included grass or legume seed, vegetable or truck crops, cash grains, head of dairy cows, cattle or sheep, number of poultry animals, tree fruits/nuts and other. A second group of questions considered complaints received from

surrounding land owners, if any, who complained (farm or non-farm resident), if the complainant lived within one-quarter mile, how often, and what time of year the complaint occurred, and if the complaints caused them to change their farming practices. Potential farm nuisances were identified as agricultural noise, dust/chemical spraying, agricultural odors, field burning, slow machinery on roads, and other. A third group of questions asked whether they had encountered incidents on their own property, where the problem came from (farm or non-farm), how often it occurred, and how serious of a problem it was. Seriousness was based upon how often the incidents occurred, and what effects they had. Respondents were also asked if a change could be determined in number or frequency of incidents as nearby residential development increased, and what measures were taken to reduce or prevent future incidents. Potential incident types included trespassing, dogs, theft, vandalism, refuse/litter, increased traffic on roads, and other. A fourth group of questions was directed to orchard farmers only and inquired if they knew of any diseased or pest infested trees in nearby residential areas, and if so, whether these affected his orchard. The final group of questions asked what percentage of income came from farming, respondent's age, if he would sell his land for subdivision development if offered an acceptable price, what the overriding factor would be in his decision to sell, and whether he received any benefits from living near residential areas.

Twenty-five potential non-farm respondents were selected from Area I and 30 from Area II. Survey questions were divided

into three groups. Subdivision dwellers were asked how long they had lived at their present location, if they were currently or had ever engaged in any farming activities, and if any working farms were near their residence. Farm types were identical to the farm survey. The second group of questions addressed non-farm complaints against farm related activity, and whether the respondent had taken any action to correct the problem. The final group included questions about age and occupation, and if they believed agricultural operations were important, and if so, would they vote for a property tax increase to purchase important agricultural land threatened by development.

In addition, and as a supplement to the survey questionnaire, a map plot showing incidents of mischievous crimes (vandalism, theft), trespassing, and farm stock molestation reported to police or sheriff agencies from January, 1980 to February, 1984 was generated. This study assumed reported incidents on farm land originated from non-farm households. Also, it assumed mischievous crimes and trespassing reports assigned to subdivision parcels were caused by non-farm, rather than farm residents. Since stock molestation could not occur in subdivisions (ordinances prohibit farm stock in small lot residential developments), these incidents were not considered for non-farm parcels. However, investigation was made of reported farm incidents.

Distance criteria identical to those used for study area subarea delineation were also used to identify reported incidents; parcel groups were identified as abutting and/or within one-quarter, one-quarter to one-half and one-half to

three-quarters of a mile from the subdivision, and including at least 50 percent of its total acreage. Data recorded included number of parcels, and the number, frequency and type of report. Also, whether or not the parcel borders a road was considered. Examination of reported nuisance distribution was hypothesized to reveal a greater number and/or frequency near farm/non-farm parcel concentrations and along roads, with a gradual reduction of incidents as distance between farm and non-farm parcels increased.

Additional information sources included aerial photos, cadastral maps, and field reconnaissance to provide an accurate survey of study area farming activity, type and size of operation, and the overall locational relationship of farms and subdivisions. Personal interviews with agricultural extension and soil conservation agents, and county animal control officers contributed further information.

RESULTS AND DISCUSSION

This discussion will consider: (1) the presence and geographic distribution of incidents and nuisances recorded in the telephone survey results, (2) the spatial arrangement of incidents reported to police and sheriff departments, and (3) the impact or significance of the incidents and nuisances.

SURVEY RESULTS

Of the 92 potential survey respondents originally selected, 58 (63%) completed the questionnaire. Thirty (68%) of 44 potential respondents were from Area I, including 15 farm and 15 non-farm respondents. Twenty-eight (58%) of 48 potential respondents were from Area II, including 10 farm, and 18 non-farm respondents. Of the 34 (37%) potential respondents who did not participate in the survey, 13 had unlisted phone numbers, 11 could not be reached, and ten did not wish to participate in the survey.

Farm Survey

Twenty-two of 25 farm respondents were engaged in farming activities. Of the other three, one manufactured sawmill machinery, another was an insurance salesman who maintains his office at home, and the third was the Eugene School District, which owns a parcel in Area I, but has not farmed or leased it for two years. Average farm size in Area I (11.26 acres) and Area II (24.55 acres) was small and only three (12%) respondents identified farming as providing more than 50 percent of their income.

Complaints against farming activity in both areas was limited to dust/chemical spraying (29%), and slow machinery (17%) (Table I). Twenty percent of Area I respondents received at least one complaint against dust/chemical spraying, and 40 percent in area II. Complaints against slow machinery were

TABLE I

COMPLAINTS RECEIVED BY FARM
RESPONDENTS OVER PAST TWO YEARS

COMPLAINT TYPE	STUDY AREA I				STUDY AREA II				TOTAL			
	<u>Yes</u>		<u>No</u>		<u>Yes</u>		<u>No</u>		<u>Yes</u>		<u>No</u>	
	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>
Agricultural Noise	0	0	15	100	0	0	10	100	0	0	25	100
Dust/Chemical Spraying	3	20	12	80	4	40	6	60	7	29	18	71
Agricultural Odors	0	0	15	100	0	0	10	100	0	0	25	100
Field Burning	0	0	15	100	0	0	10	100	0	0	25	100
Slow Machinery	2	13	13	87	2	20	8	80	4	17	21	83

Source: Telephone survey of farm respondents.

received by 13 percent of Area I respondents and 20 percent of Area II respondents.

One respondent completely eliminated complaints against his spraying by not wearing a mask. Apparently, complainants had equated a mask with harmful sprays and lack of a mask with unharmed sprays. Another respondent changed from spraying during the day, to spraying in the early morning. No other complaints or changes as a result of complaints were identified in Area I or II. Lack of significant complaints was probably due to farm size and the characteristically less intense agricultural operation.

Although complaints against farm activity were limited, farm survey results indicated a problem with residentially (non-farm) produced incidents in farm areas (Table II). Overall, 72 percent of all farm respondents identified at least one of the following incidents as a problem: trespassing (68%), theft (40%), vandalism (36%), dogs (24%), refuse/litter (20%), and increased road traffic (4%).

A final nuisance inquiry pertained to orchard owners only. Of the four orchard owners contacted, two indicated that nearby diseased or pest infested residential orchard trees had affected their trees. However, only one respondent could substantiate his claims. Of the 11 percent of his trees which were currently affected or which had been removed due to disease or pest infestation, the vast majority are, or were nearest a road of high traffic volume. The respondent knew of several infested trees in the subdivision just south of his orchard. The other respondent "believed" his trees had been affected, but could not

TABLE II

INCIDENTS IDENTIFIED BY
FARM RESPONDENTS

NUISANCE TYPE	STUDY AREA I				STUDY AREA II				TOTAL			
	<u>Yes</u>		<u>No</u>		<u>Yes</u>		<u>No</u>		<u>Yes</u>		<u>No</u>	
	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>
Trespassing	11	73	4	27	6	60	4	40	17	68	8	32
Dogs	3	20	12	80	3	30	7	70	6	24	19	76
Theft	7	47	8	53	3	30	7	70	10	40	15	60
Vandalism	7	47	8	53	2	20	8	80	9	36	16	64
Refuse/Litter	4	27	11	73	1	10	9	90	5	20	20	80
Increased Road Traffic	0	0	15	100	1	10	9	90	1	4	24	96

Source: Telephone survey of farm respondents.

state from where or how many.

Relative to Area II, Area I respondents indicated a slightly higher overall occurrence of incidents. Trespassing (73%) was the most frequent problem in Area I, followed by theft (47%), and vandalism (47%), refuse/litter (27%), and dogs (20%). Incidents of increased road traffic were not identified.

Particular incident types were identified as serious, costly, and causing significant changes in farm practices, including trespassing, motorcycles, theft of farm tools, and vandalism of farm machinery. Problems of trespassing were mainly related to fishermen and juveniles. Several McKenzie River access points, including a small craft launch, exist along the eastern boundary of Area I. Evidently, the river's amenities cause fishermen, equestrian enthusiasts, and adolescents to stray from public right-of-ways and cross private land.

Motorcycles were also a serious problem. Several respondents have experienced incidents of motorcycle damage to their wheat crop. One respondent found a wallet of a motorcyclist, visited his home, and spoke with his parents. Both the teenager and his parents denied he had ever ridden his motorcycle on the parcel. In a different instance, the same farmer observed another motorcyclist riding in his field, followed him home, questioned the motorcyclist and his parents, and yet with numerous wheat particles attached to the bike, both the motorcyclist and his parents denied the farmer's accusations. Motorcycle activity reduced crop production and farm income, and caused each respondent to construct at least

one new gate, and strengthen fence portions; both actions incurred costs of capital and labor.

Occurrences of theft and/or vandalism were identified by 11 (73%) respondents. Incidents of note included the loss of 100 gallons of gasoline, several ladders and other small tools, and the headlights of a new tractor. Significant vandalism, besides damage from motorcycles, included fence and gate breakage, dumping of waste cement, and "4-wheel" activity. Six (55%) respondents made changes to reduce or prevent future incident occurrence, such as locking up tools at night, parking farm vehicles at their home, and hiring a guard to patrol their land.

Eight (72%) of the 11 respondents who identified incidents attributed them to nearby subdivision residents. One (9%) respondent identified an incident (trespassing) with a neighboring farmer and two (18%) were not sure where the incident originated. Two (18%) respondents felt the number and frequency of incidents had increased as subdivision development continued, while nine (82%) believed they had remained the same.

In answer to whether or not a respondent would sell his land if offered an acceptable price, nine (60%) of 15 said "No," one (6%) said "Yes" and five (33%) were not sure. Common reasons for "No" answers were "my family has owned the land for several generations" or, "I enjoy the country setting." The positive reply was from a respondent who had originally bought his parcel for speculation.

When asked if they received any benefits from living close to residential areas, six (40%) respondents were not sure, six

(40%) said "No", and three (20%) said "Yes." One respondent indicated she sold fruit and berries to canning hobbyists.

As in Area I, trespassing (60%) was the most significant type of incident in Area II. It was followed by dogs (30%), and theft (30%), vandalism (20%), refuse/litter (10%), and increased road traffic (10%). Particular nuisance types identified as serious (seriousness was based upon how often the incidents occurred and what affects they had) included trespassing, vandalism and dogs molesting sheep.

Incidents of trespassing were again related to fishermen, equestrian enthusiasts, and adolescents. Three (30%) respondents identified most of their trespassing problems with children from a nearby school. Most trespassing occurred after school let out and during the summer fruit and nut harvesting months. One respondent constructed a fence at substantial cost to prevent trespassing.

Incidents of vandalism were often associated with trespassing. One respondent identified incidents of heavily vandalized farm machinery, rifle bullet holes in irrigation pipe, and broken windows in storage areas. According to the respondent, the significance of these incidents was their cost in time and labor, not their direct monetary costs. One month's incidents in 1982 cost this respondent \$1,000 and 40 hours of extra work.

Trespassing was also identified with theft. Two (20%) respondents indicated people stole fruit and nuts from orchard trees nearest the road. One respondent reduced theft by planting several rows of corn between the road and her orchard.

Molestation of sheep was identified by two (20%) respondents. Both indicated the nuisance had caused them to replace their sheep with cattle and/or horses. One respondent had shot and killed a dog molesting his sheep, was taken to court by its owner, but neither party was charged. A short while later, the respondent discovered the skin from one of his sheep hanging from a tree near his home. The respondent soon sold his remaining flock.

In total, four (67%) of the six respondents identifying incidents instituted changes to reduce or prevent future nuisance occurrences. Four (67%) respondents also attributed incidents to nearby subdivision residents. No respondents identified an incident with a neighboring farmer and two (33%) could not say from where the incident came. One (17%) respondent believed the number and frequency of incidents had increased as subdivision development continued, while five (83%) felt they had remained the same.

Eight (80%) of ten respondents answered "No" to the question concerning the selling of his land if offered an acceptable price, none said "Yes", and two (20%) were not sure. In answer to the remaining question of whether or not benefits were gained from living close to residential areas, four (40%) indicated "No", three (30%) said "Yes", and three (30%) were not sure.

Significance of Distance to Non-Farm Produced Nuisances

Of 25 farm respondents, 18 (72%) identified at least one incident, 17 (68%) at least two, and nine (36%) three or more incidents. Eight (80%) of 10 respondents in areas abutting and/or within one-quarter mile of a subdivision identified incidents, seven (100%) of seven respondents between one-quarter and one-half mile, and three (43%) of seven between one-half and three-quarters mile of a subdivision.

Although the number of incidents identified by each farm respondent varied from one to six, many variables influenced a particular incident's occurrence. Farm stock molestation for example, could not occur unless farm animals, especially sheep, were present. Respondents with cattle and horses reported no incidents with dogs. Trespassing and theft were also more prevalent with respondents who owned orchards. People would trespass to pilfer orchard trees of their fruit. An additional nuisance was peculiar to wheat fields. Motorcycles, especially during the early growing season, caused damage to wheat crops. Yet as the wheat became taller, respondents indicated few motorcycles entered their fields. Other variables, such as a school, the Willamette and McKenzie Rivers, and the distance between unmaintained, and maintained orchard operations, influenced the number and location of identified incidents.

Non-Farm Survey

Twenty-two (67%) of 33 respondents identified at least one of the following nuisances with nearby agricultural operations; field burning (45%), slow moving machinery on roads (21%), dust/chemical spraying (12%), agricultural odors (9%), and agricultural noise (6%). One (3%) respondent identified cows loose on the street as an additional nuisance. Field burning was rated as serious by seven (21%) respondents, dust/chemical spraying by two (6%) respondents, and agricultural odors and slow moving machinery by one (3%) respondent each.

Between both Area I and II, 29 (89%) respondents felt agricultural operations were important and needed protection, one (3%) did not, and three (9%) were not sure. Eighteen (55%) indicated they would vote for a property tax increase to purchase agricultural land threatened by development, seven (21%) said they would not, and eight (24%) were unsure.

Eight (53%) of 15 respondents in Area I identified nuisances (Table III). Field burning (53%) was the most dominant, and was followed by slow moving machinery (13%). Each of the remaining nuisances were identified by one (7%) respondent each, including agricultural noise, dust/chemical spraying and agricultural odors. Loose cows on the street were also identified as a nuisance. These animals pasture on lots within one-quarter mile of the respondent's home. Field burning was rated as serious by five respondents, slow moving machinery by one respondent, and dust/chemical spraying by one respondent. A commercial orchard operation abuts the property

TABLE III

NUISANCES IDENTIFIED BY
NON-FARM RESPONDENTS

NUISANCE TYPE	STUDY AREA I				STUDY AREA II				TOTAL			
	<u>Yes</u>		<u>No</u>		<u>Yes</u>		<u>No</u>		<u>Yes</u>		<u>No</u>	
	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>	<u>#</u>	<u>%</u>
Agricultural Noise	1	7	14	93	1	6	17	94	2	6	31	94
Dust/Chemical Spraying	1	7	14	93	3	17	15	83	4	12	29	88
Agricultural Odors	1	7	14	93	2	11	16	89	3	9	30	91
Field Burning	8	53	7	47	7	39	11	61	15	45	18	55
Slow Machinery	2	13	13	87	5	28	13	72	7	21	26	79
Other (Loose Cattle)	1	7	14	93	0	0	18	100	1	3	32	97

Source: Telephone survey of non-farm respondents.

of the respondent which identified dust/chemical spraying as a nuisance.

In Area II, seven (39%) of the 18 respondents identified nuisances. Field burning (39%) was the most prevalent type, followed by slow moving machinery (28%), dust/chemical spraying (17%), agricultural odors (11%), and agricultural noise (6%). Serious ratings were given to field burning by two respondents, agricultural odors by one respondent, and dust/chemical spraying by one respondent whose property abuts a grass and orchard farm (four levels of seriousness were identified in the survey; very, somewhat, not too, and not at all serious).

Significance of Distance to Farm Produced Nuisances

Of 33 non-farm respondents, 22 (67%) identified at least one nuisance, 7 (21%) at least two, and two respondents (6%), three nuisances. No respondent identified more than three nuisances. Twelve (63%) of 19 respondents in areas abutting and/or within one-quarter mile of a farm parcel identified nuisances, seven (78%) of nine respondents between one-quarter and one-half mile, and three (60%) of five respondents between one-half and three-quarters mile did so.

Although more than 50 percent of the respondents in each area identified nuisances, field burning was the only nuisance identified by 11 (33%) of 33 respondents. Also, although externalities (i.e.-smoke, odors) produced from field burning are recognized as a significant nuisance, their point of origin may be many miles from the place of nuisance occurrence. This

idea was supported by several respondents who identified the source of field burning as beyond one mile and therefore, outside study area boundaries.

Eliminating field burning from consideration, six (32%) of 19 respondents in areas abutting and/or within one-quarter mile of a farm parcel identified nuisances, two (22%) of nine respondents between one-quarter and one-half mile, and three (60%) of five respondents between one-half and three-quarters mile. Each of the three respondents between one-half and three-quarters mile identified slow machinery as the only nuisance. All three use a highway (Hwy 126) important for commuting and farm vehicle movement.

SPATIAL ANALYSIS OF REPORTED INCIDENTS

Of the more than 14,000 reports of mischievous crimes (vandalism, theft), trespassing, and farm stock molestation recorded by police and sheriff agencies between January, 1980 and February, 1984, and plotted as points on a RIS map (map pocket; back cover) of the northern metropolitan area, less than five percent were identified with urban fringe farm parcels (most incidents occurred within the built up areas of Eugene and Springfield). However, after analyzing the map plot, two spatial patterns became evident. Most points were identified with farm parcels that: (1) abutted, or were within one-half mile of a subdivision, or (2) were located along important subdivision collector and/or arterial streets. Points representing criminal mischief occurred most frequently,

followed by trespassing and stock molestation.

Three areas, identified on the map as Areas A, B, and C, exhibit the above described spatial patterns:

Area A. Area A is characterized by several small lot subdivisions interspersed with large lot commercial agricultural operations. All three types of reports are represented, with criminal mischief most prevalent, followed by trespassing, and stock molestation. All but three of the 20 reports are within one-quarter mile of a subdivision. Two of those three abut an arterial road and two are within a half-mile of a subdivision. The remaining point (mischievous crimes) lies beyond one-half mile of a subdivision.

Area B. Area B parallels a road important for subdivision and farm access. Incidents of criminal mischief predominate, followed by trespassing. Reports of stock molestation are not represented. All but one of the 12 reports are identified with lots which abut the road; the remaining report is within one-quarter mile of a road.

Area C. Area C lies approximately two to three miles east of Study Area II, and is characterized by numerous large lot rural residential parcels. Reports of criminal mischief and stock molestation are equally represented (six reports each); however, no reports of trespassing are identified. All criminal mischief, and four of six stock molestation reports are within one-quarter mile of the subdivisions.

In total, of the 66 reports identified across the RIS map, 48 (73%) abut, or are within one-quarter mile, 14 (21%) are between one-quarter and one-half mile, and four (6%) are

between one-half and three-quarters mile of a subdivision or important road. When reviewing these figures, it is important to remember that some reports occurred more than once on the same parcel. Therefore, multiple reports might be construed as biasing the results. However, when considering the spatial patterns found in Areas A, B, and C, and the overall arrangement of reports in general, multiple reports become less important. Also, all multiple reports are located within the one-quarter mile range. This reemphasizes the significantly higher percentage (73%) of reports within this one-quarter mile area.

CONCLUSIONS AND RECOMMENDATIONS

Two (Goals three and 14) of LCDC's 19 goals and guidelines are designed to facilitate the containment of urban expansion and preserve agricultural land. Goal three recommends establishment of buffer, or transitional, areas of open space between urban and rural land uses. Goal 14 mandates creation of UGB's to identify and separate urbanizable land from rural land. A legally designated UGB has been established for the Eugene-Springfield metropolitan area, a buffer has not. However, although a significant number of incidents and nuisances were identified in this study, a buffer, created by a free market economy, may already exist.

Both farm and non-farm respondents indicated the presence of incidents and nuisances, but the percentage, variety, and degree of impact of incidents was greater on farm parcels.

In Area I, the most commonly reported incident was trespassing (73%), followed by theft (47%), vandalism (47%), refuse/litter (27%), and dogs (20%). In Area II, trespassing (60%) was again most prevalent, followed by dogs (30%), theft (30%), vandalism (20%), refuse/litter (10%), and increased road traffic (10%). Among all farm respondents surveyed, trespassing (68%), theft (40%), and vandalism (36%) were most dominant (Table II). Yet among all non-farm respondents, only one nuisance, field burning (45%), exceeded 25 percent (Table III).

Although the number of incidents occurring on farms was hypothesized to decrease with increasing distance from subdivision development, findings indicate no such relationship. Eighty percent (80%) of the respondents within the abutting to one-quarter mile subarea identified incidents, 100 percent (100%) between one-quarter and one-half mile, and 43 percent (43%) between one-half to three-quarters mile of subdivision development. Non-farm responses produced similar results. Sixty-three percent (63%) of the respondents within the abutting to one-quarter mile subarea identified nuisances, 78 percent (78%) between one-quarter and one half mile, and 60 percent (60%) between one-half and three-quarters mile of the farm parcels. Therefore, no correlation was found between successive one-quarter mile subareas and number of incidents or nuisances.

However, findings did indicate relationships existed between the occurrence of incidents and nuisances, and study area geography. Particular incident types were more common to specific agricultural operations. Orchards were

characterized by pilferage of fruit and theft, grain fields by vandalism from motorcycles, and other recreational vehicle activity, row crops by vandalism to irrigation infrastructure, and sheep flocks by dogs. The alignment of roads in relation to subdivisions and farm parcels also affected incidents and nuisances. Orchard trees nearest roads of high vehicle volumes incurred heavier fruit losses, due to pilferage, than did those trees further away. Also, all seven non-farm respondents identifying slow machinery as a nuisance used roads important for farm machinery movement. In addition, most of the incidents identified in the spatial analysis, paralleled or were near a road.

Finally, average farm size within Area I (11.26 acres) and Area II (24.55 acres) was small, and only three (12%) of 25 respondents identified farming as providing more than 50 percent of their income. Additionally, 18 (72%) respondents owned parcels of 20 acres or less, but only two (8%) respondents owned parcels of 40 acres or more. This would seem to characterize most study area farm respondents as "hobby" farmers rather than commercial farmers. Also, because one farm respondent attributed an incident (trespassing) to a neighboring farmer, the assumption that reported incidents on farm land originated from non-farm households is not necessarily accurate. Considering these findings, the significance of incidents occurring on farm parcels becomes less.

In view of these studies, the following is recommended:

- (1) Development of "hobby" type farms should be encouraged along the UGB. Existing fringe farm parcels incapable of producing a profit due to size or other variables should be allowed to subdivide into several hobby size farm acreages.
- (2) Additional public access easements should be designated along the Willamette and McKenzie Rivers. Easements should be adequate to accomodate recreationists on foot and horse.
- (3) A general fund should be established to assist farmers with improved fence or gate construction, especially on parcels nearest schools and abutting roads.
- (4) Law enforcement agencies should assist urban fringe farmers in development of citizen surveillance groups similar to "Neighborhood Watch."

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APPENDIX

Tax Lot Number: _____
 Phone Number: _____
 Map Number: _____

FARM SURVEY QUESTIONNAIRE

Hello, my name is Kevin Daughton. I'm a graduate student in Geography at Oregon State University, working on a research paper. I'd like to ask you some questions if you don't mind. The information you give me is strictly confidential and results are tabulated for the area as a whole, not for any one person.

	<u>Yes</u>	<u>No</u>
1) Are you currently, or have you recently farmed your land?.....	1	2

[IF YES TO Q #1, PROCEED WITH SURVEY: IF NO, USE NON-FARM SURVEY]

2) Altogether, how many years have you been farming?..... _____
 3) How many years have you operated your present farm?..... _____
 4) How many acres are you farming for 1984?..... _____

5) I have a list of several kinds of farm crops. As I read each one, please tell me how many total acres, if any, you have of each for 1984.

	<u>Acres</u>
a. Grass or legume seed.....	_____
b. Vegetable or truck crop.....	_____
c. Cash grains.....	_____
d. Head of dairy cows.....	_____
e. Head of cattle or sheep.....	_____
f. Number of poultry animals.....	_____
g. Tree fruits/tree nuts.....	_____
h. Other.....	_____

6) Occasionally we hear of complaints being made by those who live near farming operations. As I read a list of some of these, would you please tell me whether or not you have received each of these complaint in the two years.

	<u>Yes</u>	<u>No</u>
a. Agricultural noise.....	1	2
b. Dust/chemical spraying.....	1	2
c. Agricultural odors.....	1	2
d. Field burning.....	1	2
e. Slow machinery on roads.....	1	2
f. Other.....	1	2

[IF YES TO ANY OF Q #6, RECORD COMPLAINT TYPE AND ASK]

[GO TO Q #8]

	<u>Farm</u>	<u>Neighbor? Residential</u>	<u>Both</u>	<u>Don't know</u>	<u>Complaint Type (a-f)</u>
g. Do you know if this complaint was from a farm neighbor, residential neighbor, or both?	1	2	3	4	_____
	1	2	3	4	_____
	1	2	3	4	_____
	1	2	3	4	_____

[GO TO Q #6K]

	<u>Yes</u>	<u>No</u>	<u>Complaint Type (a-f)</u>
h. Is the complaintant's property next to yours?....	1	2	_____
	1	2	_____
	1	2	_____
	1	2	_____

[GO TO Q #6j]

	<u>N</u>	<u>S</u>	<u>E</u>	<u>W</u>	<u>Complaint Type (a-f)</u>
i. On what side of your property is the complaintant's property?	1	2	3	4	_____
	1	2	3	4	_____
	1	2	3	4	_____
	1	2	3	4	_____

	<u>Yes</u>	<u>No</u>	<u>Complaint Type (a-f)</u>
j. Is it within one-quarter mile?	1	2	_____
	1	2	_____
	1	2	_____
	1	2	_____

	<u>Yes</u>	<u>No</u>	<u>Complaint Type (a-f)</u>
k. Do you receive this complaint during a specific time of the year?	1	2	_____
	1	2	_____
	1	2	_____
	1	2	_____

↓
[GO TO Q #6n]

		<u>Time of Year</u>				<u>Complaint Type (a-f)</u>
		<u>Spring</u>	<u>Summer</u>	<u>Fall</u>	<u>Winter</u>	
l. What time of the year?	1	2	3	4	_____	
	1	2	3	4	_____	
	1	2	3	4	_____	
	1	2	3	4	_____	

		<u>#/week</u>	<u>#/month</u>	<u>#/season</u>	<u>Complaint Type (a-f)</u>
m. How often during this time of the year do you receive this complaint in terms of number per week, number per month, or number per season?	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____

		<u>#/week</u>	<u>#/month</u>	<u>#/year</u>	<u>Complaint Type (a-f)</u>
n. How often do you receive this complaint in terms of number per week, number per month, or number per year?	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____

[IF YES RECORDED FOR ANY OF Q #6 ASK Q #7 ALSO]

7) Yes No
1 2
 a. Have these complaints caused you to change your farming practices?

↓ [GO TO Q #8]

b. What specific changes did you make?

c. Have you stopped farming specific parcel sections and/or entire parcels because of complaints? Yes No
1 2

8) Now on the other side, farmers sometimes have complaints of their own. Therefore, have you had any of the following incidents occur on your property in the past two years?

	<u>Yes</u>	<u>No</u>
a. Trespassing.....	1	2
b. Dogs.....	1	2
c. Theft.....	1	2
d. Vandalism.....	1	2
e. Refuse/litter.....	1	2
f. Increased traffic on roads.....	1	2
g. Increased runoff onto fields.....	1	2
h. Other.....	1	2

↓ [GO TO Q #9]

[IF YES, RECORD NUISANCE TYPE AND ASK]

i. Do you know if this incident came from a farm neighbor, residential neighbor, or both?

	<u>Farm</u>	<u>Residential</u>	<u>Both</u>	<u>Don't Know</u>	<u>Incident Type (a-h)</u>
	1	2	3	4	_____
	1	2	3	4	_____
	1	2	3	4	_____
	1	2	3	4	_____

↓ [GO TO Q #8j]

↓ [GO TO Q #9]

	<u>Yes</u>	<u>No</u>	<u>Incident Type (a-h)</u>
j. Did the incident come from property which is next to yours?	1	2	_____
	1	2	_____
	1	2	_____
	1	2	_____

	<u>N</u>	<u>S</u>	<u>E</u>	<u>W</u>	<u>Incident Type (a-h)</u>
k. On what side of your property is the property from which the incident came?	1	2	3	4	_____
	1	2	3	4	_____
	1	2	3	4	_____
	1	2	3	4	_____

	<u>Yes</u>	<u>No</u>	<u>Incident Type (a-h)</u>
l. Is it within one-quarter mile?	1	2	_____
	1	2	_____
	1	2	_____
	1	2	_____

	<u>#/week</u>	<u>#/month</u>	<u>#/year</u>	<u>Incident Type (a-h)</u>
m. How often does this incident occur in terms of number per week, number per month, or number per year?	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____

n. As residential development has continued, has the frequency of incidents increased, decreased or stayed the same?	Increased 1
	Decreased 2
	Stayed the same 3

[IF YES TO ANY OF Q #8 (a-h), ASK]

o. What changes have you made to reduce or prevent these incidents?

[ORCHARD OWNERS ONLY]

	<u>Yes</u>	<u>No</u>	<u>Don't Know</u>
9. a. Do you know of any diseased or pest infested orchard trees in nearby residential areas?	1	2	3
↓			
b. Have these trees affected yours?	1	2	3

Now, I'd like to ask a few questions about you.

10. Approximately what percentage of your household income comes from each of the following sources?
- | | <u>%</u> |
|--------------------------|----------|
| a. Farm Income..... | _____ |
| b. Job off the farm..... | _____ |
| c. Other..... | _____ |
11. What is your age? _____

- | | <u>How likely?</u> | | | |
|--|--------------------|-----------------------|--------------------|-----------------------|
| | <u>Very</u> | <u>Some-
what</u> | <u>Not
too</u> | <u>Not at
all</u> |
| 12. a. If a developer offered you an acceptable price for your land tomorrow, how likely would you be willing to sell? | 1 | 2 | 3 | 4 |
| b. What would be the single most overriding factor in your decision? | | | | |

- | | <u>Yes</u> | <u>No</u> | <u>Don't Know</u> |
|--|------------|-----------|-------------------|
| 13. a. Do you receive any benefits from living close to residential areas? | 1 | 2 | 3 |
| ↓ | | | |
| b. What specific benefits are these? | | | |
| ↓ | | | |
| 14. Is there anything else you would like to say? | | | |

[THANK YOU FOR YOUR COOPERATION]

Tax Lot Number: _____

Phone Number: _____

Map Number: _____

NON-FARM SURVEY QUESTIONNAIRE

Hello, my name is Kevin Daughton. I'm a graduate student in Geography at Oregon State University, working on a research paper. I'd like to ask you some questions if you don't mind. The information you give me is strictly confidential and results are tabulated for the area as a whole, not for any one person.

1) How many years have you lived in your present location? _____

[IF THIS SURVEY IS BEING ASKED TO OWNERS OF PARCELS IN FARM AREAS WHO DO NOT FARM, OMIT Q'S #2 AND #3 AND GO FROM Q #1 to Q #4]

	<u>Yes</u>	<u>No</u>
2) Are you currently involved in any farming operations?.....	1	2
3) Have you ever engaged in any farming operations?.....	1	2
4) Are there any working farms near your home?.....	1	2

5) I have a list of several kinds of farms, as I read each one, please tell me the direction this farm type is from your home as if you were looking out your front window. You can use north, south, east, west, or front, back, right, or left to tell me this direction. [A MAP SHOULD BE USED FOR REFERENCE TO HELP DETERMINE WHICH DIRECTION RESPONDENT IS IDENTIFYING. HOWEVER, UNLESS ASKED DIRECTLY, DO NOT TELL THEM OF YOUR MAP.]

	<u>N</u>	<u>S</u>	<u>E</u>	<u>W</u>	<u>Don't know</u>
a. Grass or legume seed.....	1	2	3	4	5
b. Vegetable or truck crop.....	1	2	3	4	5
c. Cash grains.....	1	2	3	4	5
d. Dairy.....	1	2	3	4	5
e. Cattle or sheep.....	1	2	3	4	5
f. Poultry.....	1	2	3	4	5
g. Orchard.....	1	2	3	4	5
h. Other.....	1	2	3	4	5

6) Occasionally we here of problems between farm practices and surrounding land owners. As I read a list of some of these, would you please tell me whether or not you have had these problems in the past two years.

			# Past 2 years	How Serious?			
	Yes	No		Very	Some- what	Not too	Not at all
a. Agricultural noise.....	1	2	_____	1	2	3	4
b. Dust/chemical spraying.....	1	2	_____	1	2	3	4
c. Agricultural odors.....	1	2	_____	1	2	3	4
d. Field burning.....	1	2	_____	1	2	3	4
e. Slow machinery on roads.....	1	2	_____	1	2	3	4
f. Other.....	1	2	_____	1	2	3	4

7) [IF YES WAS ANSWERED TO ANY OF Q #6, ASK]

	Yes	No
a. Have you taken any action to correct these problems?.....	1	2
b. What specific action have you taken?	_____	

Now, I would like to ask a few questions about you.

	Yes	No
8) Is your occupation connected with any agricultural operation?...	1	2
9) Do you think agricultural operations are important and in need of protection from urban development?.....	1	2
10) Would you vote for a property tax increase of one to two cents per hundred dollars of your land and properties assessed value, for the purchase of important agricultural land threatened by development?.....	1	2
11) What is your age?.....	_____	
12) Is there anything else you would like to add?	_____	

[THANK YOU FOR YOUR COOPERATION]