IMPACT ASSESSMENT OF THE PROPOSED TEKTRONIX DEVELOPMENT ON THE CITY OF LEBANON, OREGON

by

LYNN ANN BURGESS

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Dr. R. M. Northam

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ABSTRACT: Industrial expansion in a small city can have a wide range of effects upon the immediate community and surrounding labor force area. One example of this is the impact that Tektronix, a worldwide electronics firm, could have on the City of Lebanon, Oregon, where a plant, initially employing about 500 people, is proposed. Three major areas of concern are examined; (1) social impact, including population, housing, transportation, community services and public utilities, (2) economic impact, including employment, income, taxes and municipal finances, and (3) physical impact, involving effects on the site and on air and water quality.

INTRODUCTION

Tektronix, Inc. has proposed to build an industrial plant on a 253-acre site on the northwest side of Lebanon, Oregon (Figure A-1). In view of the information provided by Tektronix regarding the size and scope of the proposed development, the following study attempts to evaluate the social, economic and physical impact that might be experienced in West Linn County during the initial phase of the plant's operation.

Tektronix, commonly referred to as Tek, is a rapidly growing electronics firm specializing in the production of oscilloscopes, graphics computer terminals and television monitors. The company employs 22,000 people worldwide, 16,000 of which are employed in Oregon and southwest Washington. Tek originated in the Pacific Northwest and has

a strong desire to continue to grow in the area. Reasons for locating in Lebanon include the area's livability, availability of a good labor force and good access to major freeway systems.[1]

Tek began looking at the property immediately adjacent to the city in the spring of 1978. In response to this, the Lebanon Planning Commission proceeded to seek county approval to expand Lebanon's Urban Growth Boundary (UGB) to include the proposed plant site (Table B-1). Tek signed purchase agreements with the three present owners of the land on February 20, 1979, and by April 11, 1979, Lebanon's UGB was officially expanded to include the site. The last step in the acquisition process involved annexation of the land into the city and subsequent rezoning to a light industrial classification. Though Tek's annexation request was approved on October 17, 1979 by the Lebanon City Council, the Friends of Linn County soon after filed an appeal with the Oregon Land Use Board of Appeals.[2] This Board was then given until February 15, 1980 to make their decision regarding the issue.

Specific development plans for the project site have not been defined by Tek. Instead, the company has drawn up a development study that proposes two hypothetical levels of site development in terms of employment. Level 1, which would take place at the time of initial employment, assumes 500 employees, and Level 2, taking place several years later, assumes 3,000 employees.[3] Because very little is known at this point about the specifics of the development over time, the

objective of this study is to evaluate impact that could occur during the Level 1 phase only, which is forecasted to take place in 1984 or 1985. It is important to note that this approach could potentially give misleading conclusions regarding the overall impact of the Tek plant on Lebanon, since long-term effects are not taken into account. It is beyond the scope of this study to examine community impact occurring after the first year of the plant's operation.

In order for a community to make an informed decision on a development proposal or to develop appropriate and reasonable conditions of approval, it is necessary to assess the probable impacts of the new development as accurately as possible. This involves looking at three major areas of concern, which are the social, economic and physical effects of the development. Social effects include impact on population, housing, transportation, community services and public utilities. Economic impact concerns changes in the employment structure and in taxes and municipal finances. Physical effects include impact on the site and on air and water quality. Each of these topics will be briefly examined in the following study.

SOCIAL IMPACT

Population

An increase in population will be one direct impact made by the Tek development. According to estimates made by Tek, fifty percent of the 500 initially employed workers will move into Lebanon and its labor force area from outside the area.[4] Using a safe range of 2.5 to 3.5 persons in the resident population for every resident employee, 250 imported Tek employees would increase the local population by 625 to 875 persons (Table B-2). Tek has also estimated that fifty percent of the initial employees of the new plant will reside in Lebanon, and the other fifty percent will live in the labor force area surrounding it, or about 125 new resident employees in each of these two areas.[5] This means that between 312.5 and 437.5 new people will be expected to move into Lebanon and the same number into Lebanon's labor pool area.

Using an annual growth rate of 2.97 percent for Lebanon, population for 1985 is estimated to be 11,395. Assuming that Lebanon's labor force area includes two Benton County census divisions, Corvallis and North Albany, and the twelve western Linn County census divisions that surround Lebanon, the population of the labor force region outside Lebanon is estimated to be 147,071 by 1985 (Table B-3).[6]

In addition to direct growth attributed to the Tek development, secondary employment growth also will take place, though not immediately. This impact will tend to lag over two or three years

from the time the plant begins operation.[7]

Assuming that operation of the Tek plant begins in 1985, total population of Lebanon at that time could range between 11,707 and 11,833, while total population in the labor pool area could range between 147,383 and 147,509 persons as a direct result of the plant employment.

Distribution of the 250 Tek employees throughout the labor force area outside Lebanon has been estimated with the use of a gravity model.[8] Using population and travel time as determining factors, the model generated rough estimates of the number of employees that are expected to live in each county census division of the labor force area. Because there are other factors, such as the average cost and availability of housing, and the cost of driving a vehicle in the future, each county census division was assigned on ordinal ranking, which ranged from very high to very low interaction. The calculations suggest that the highest potential for employee location is in the South Lebanon county census division, and the cities of Corvallis and Albany; however, it is anticipated that fewer employees will move to Corvallis than the gravity model calculations suggest, and therefore, Corvallis has been assigned a medium interaction ranking. This anticipation is based on the present situation at the Hewlett-Packard plant in Corvallis, where approximately thirty percent of the plant's employees live in Albany, and only approximately 2-5% of employees live in the Lebanon/Sweet Home area. In addition, a good percentage of the plant's employees live in country

homes located outside the city limits of Corvallis and Albany, where land parcels are larger and there exists a more rural atmosphere.[9] Assuming similar locational factors are used by the imported Tek employees, a high percentage of in-migrants moving into the labor pool area are expected to move into rural areas surrounding Lebanon and into the City of Albany (Figure A-2).

Housing

The housing market in the Lebanon area will reflect the increased job opportunities provided by the Tektronix development. It has already been estimated that in-migration of people from outside the area will be a maximum of 875 persons at the time of initial employment and that 50 percent of these people will move to Lebanon alone. Housing impact by these incomers will depend on many factors, including (1) vacancy rates throughout the area, (2) availability of buildable residential land, (3) household size, and (4) average household income.

Vacancy rates throughout Linn County have remained fairly low during the past decade and have only recently begun to increase slightly. For owner-occupied housing, the vacancy rate increased from 1.3 percent in 1970 to an estimated 1.4 percent in 1978, and the rental rate dropped from 7.4 in 1970 to an estimated 4.2 in mid-1978. In Lebanon, the current vacancy rates are slightly higher, with approximately 2.4 percent for single-family homes, 7.3 percent for multiple-family units, and 3.7 percent for mobile homes. These rates indicate that increased

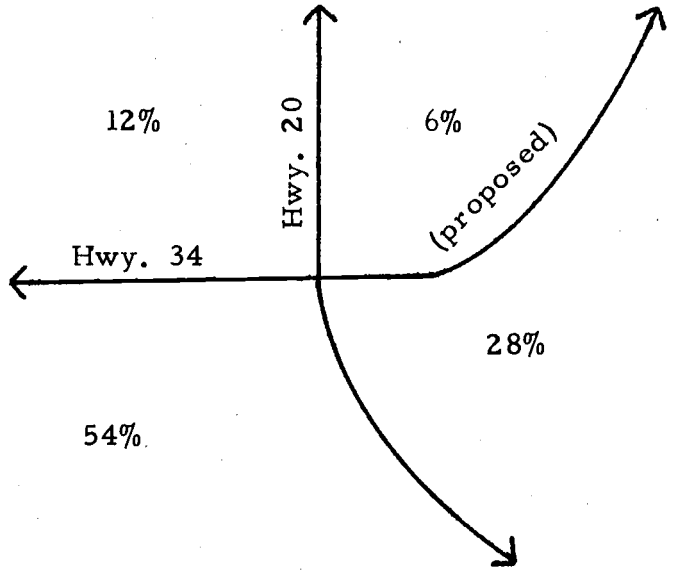
housing production will be needed to supply the demand of Tek employees.[10]

Since vacancy rates are fairly low in Lebanon, the availability of buildable residential land will greatly determine where Tek employees will reside. The Lebanon Comprehensive Plan has set aside 917 net acres within the proposed UGB for residential development, which is expected to accommodate 10,513 dwelling units, of which 4,793 exist at present. This allows for the building of 5,738 new dwelling units, which is expected to provide sufficient housing through the year 2000.[11] Fifty-one percent of new dwelling units constructed for Tek employees are expected to be single-family or mobile homes on single lots, and 49 percent are expected to be multiple-family units or mobile homes in mobile home parks.[12] A similar proportion of single-family to multiple-family units is expected in the labor force area surrounding Lebanon.

According to housing data in the Lebanon Comprehensive Plan, the greatest proportion of buildable residential land within Lebanon's proposed UGB is in the southwest and southeast section of the city. Most of this residential land set aside by the Comprehensive Plan is zoned mixed-density residential, which allows up to 22 dwelling units per net acre (either single- or multiple-family units).

Figure 1

Estimated Percentage of Residential Land Reserve



SOURCE: Lebanon Comprehensive Plan, pp. 2.10-17, 18.

A third factor involved in the housing impact is average household size. In Linn County, the average household size has declined from 3.15 in 1970 to a current estimate of 2.75 and is projected to drop to 2.64 by 1990. In Lebanon, the number of persons per household was 2.75 in 1970 and is expected to drop to 2.30 by 1990.[13] The projected number of households for Linn County and Lebanon by 1990, are 42,741 and 5,570, respectively.[14] Though more housing units per person will be needed to provide for the population as a result of declining household size, available residential land is sufficient to cover the demand well past the initial employment phase of Tek.

The fourth factor influencing the demand on housing by Tek employees relates to the average household income of the in-migrants. This will determine the type and location of new housing units throughout the area that will be available to the newcomers.

Tek has estimated that the average annual salary for the initial employees will be approximately $15,000.[15] A high percentage of employees are expected to be second income earners, which would raise the average income of the employee households.[16] In response to the rising costs for housing, there has been a considerable increase in the number of people living in mobile home units in Lebanon during the past few years. There are presently six mobile home parks and forty-seven mobile homes on individual lots within Lebanon's UGB, and the City has approved the construction of its first mobile home subdivision.[17] It is expected that incoming Tek employees will have a big demand for this type of housing alternative and for multi-family units.

Semi-skilled Tek employees moving into areas outside Lebanon will most likely gravitate toward areas that have lower average housing costs, such as Albany and Sweet Home, in addition to seeking low-cost housing alternatives, such as multiple-family units, mobile homes and modular homes; however, many professional employees will want, and be able to afford, more expensive homes in areas around Lebanon.

Transportation

In order to assess the impact made by Tektronix on the

transportation system in the Lebanon area, it is important to look at (1) the network capabilities and traffic volumes, (2) the location of areas set aside for residential development relative to the plant site, (3) the number of vehicle-trips generated by the plant development, and (4) transportation alternatives.

There are approximately 65 miles of roads within the urban growth boundary of Lebanon and traffic volume data shows that, by far, traffic flow on Highways 20 and 34 are the greatest. Lebanon's Mayor, Dan Clark, has stated that the two major transportation problems in the area are Highways 20 and 34, because they are both too narrow to make emergency stops, have too many curves, and are the scene of too many accidents.[18] Most of the flow on these roads in town is through traffic, which adds considerable congestion to the already busy downtown area of Lebanon.[19] According to Oregon's Highway Safety Plan, Lebanon has "a relatively unsafe traffic environment."[20] Because of the existing problems with the network in town, a list of recommendations for improvements have been proposed in Lebanon's Comprehensive Plan (Figure A-1).[21]

The second important factor concerning possible impact by the plant development, is the location of the residential areas where employees might live in relation to the plant site. Approximately 250 Tek employees are expected to live in Lebanon initially and will very likely be distributed according to the distribution of residential land reserves,

shown in Figure 1. These data suggest that as many as 82% of the non-local employees will live either south of Oak Street or east of the Santiam River. This situation would add a considerable amount of traffic to the downtown streets of Lebanon at commuter time, which is when most accidents occur within the city (Figure A-3).[22] The remaining 250 Tek employees are assumed to live in the labor force area outside of Lebanon. A large majority of these people are estimated to live in the South Lebanon County Census Division and in the City of Albany (Figure A-2). Increased traffic congestion on Lebanon's streets will result from those employees living south of the city. Employees living west and north will only increase traffic on Highways 20 and 34 outside of the city.

The third concern in the evaluation of transportation impact deals with the actual increase in number of vehicle-trips that are directly or indirectly generated by the plant development. The three types of trips generated will originate from: (1) the plant site, (2) the residences of the plant employees, and (3) the secondary business activity generated by the plant.

Plant site generated trips would include employee, visitor, and service trips. The Institute of Transportation Engineers (I. T. E.) has estimated that the average number of trips generated from a light industrial plant is 3.0 trips per employee per day.[23] Employee trips would be distributed according to the information above. Most visitor

and service trips are assumed to be from areas outside the city, especially service delivery trips, which will link the plant with the Portland and Eugene Airports.

Trips generated by employee residences can be divided up into single-family and multiple-family (including apartment units and mobile home park units) residences as shown in the following table.

TABLE 1

Trip Generation Per Dwelling Unit

	Weekday	Saturday	Sunday
Single-family home	9.4[a]	10.1	8.8
Multiple-family unit	3.8	5.5	4.7

[a]Weekday totals do not take into account an average of 1.6 employee trips per day. Employee trips are accounted for from the plant site.

SOURCE: Trip Generation, I. T. E.

Assuming an average of 6.8 trips per day being generated by employee families (not counting employee work trips), a total of 3400 trips per day will result, about 1700 of which will originate in Lebanon. If employee residences are distributed throughout the Lebanon labor force area as previously described, a considerable impact on Lebanon's streets, and to a lesser extent, Highways 20 and 34, will result.

The third type of trip generation will be a result of the secondary business activity directly related to the Tek development. This activity

will not be evident at the time of initial employment of the plant, so therefore, should not play a part in the impact on roads.[24]

The final consideration in impact assessment of the transportation network, is possible transportation alternatives that could have the effect of reducing the impact by Tek. Proposed alternatives are bicycles, carpooling, vanpooling, and a commuter bus line running throughout the labor force area; however, it should be noted that, up to this time, carpooling and commuter buses have not been significantly successful in reducing the number of vehicle-trips by employees at the Hewlett-Packard plant in Corvallis.[25] Therefore, the effect that these alternatives will have in reducing transportation impact will be directly related to the number of people who utilize the alternatives and the frequency that they do so.

Community Facilities

Community facilities serving the Lebanon residents include schools, parks, a city library, a community hospital, and fire and police protection. The capacity of some of these services will be greatly pressured by any increase in population, so expansion potential is an important issue and one that is dealt with in this section.

The schools being used by students living in or around the city of Lebanon will be the most impacted by urban growth directly related to the Tek development and all lie within the Lebanon Union High School District (Figure A-4). This district contains ten elementary school

districts and is the Lebanon Planning Area for Linn County.[26] Each school district appears to be experiencing slightly different rates of growth, due to the availability of residential land and the number and type of new homes being built in each district. The current enrollment and capacity figures of the Lebanon schools show that all but the high school have available seating within their present facilities (Table B-4).

The Lebanon Union High School is experiencing the greatest population pressure presently, with enrollment surpassing desirable capacity by approximately 105 students. At present, the high school is having to utilize facilities off campus to accommodate its over-enrollment. The school has experienced an average growth rate of one percent per year over the past five years, and this rate is expected to continue through 1985, unless Tek begins building in 1983. If Tek does build, the anticipated enrollment growth rate would increase to two percent per year for both 1984 and 1985. The School Board has already made the decision to expand this facility in the near future, and they will decide on one of four alternative measures in February, 1980.[27]

The Lebanon Elementary and Middle School District 16c has experienced a two percent growth rate in enrollment within the past five years. It is anticipated that this rate will continue through 1985, unless Tek begins to build their proposed plant in 1983, in which case a growth rate of four percent in 1984 and 1985 is forecast for the schools in the district. The ability for these schools to expand varies widely. Only

Green Acres Elementary and Cascades Elementary Schools have acreage suitable for building expansion.[28] These two schools have also experienced higher enrollment growth rates than others in the district, due to the comparatively high residential growth in these areas of the city.[29]

The Crowfoot Elementary School District 89c is located to the southeast of the city. Since it contains residential land set aside by Lebanon's Comprehensive Plan, it is expected to experience population growth in the coming years. All schools in the district are presently below capacity and could accommodate approximately 800 new homes,[30] assuming an equal number of single-family and multiple-family homes are constructed.[31]

The Gore Elementary School District 81 is located just north of the city and contains the Gore Elementary School, which is presently below capacity enrollment. Though the proposed Tek site lies within this district, there is less potential for residential growth here than in the Lebanon Elementary, Crowfoot and Sandridge Districts, due to a small residential land reserve in the area. Therefore, enrollment is expected to remain stable or possibly decline over the next five years.[32]

The Hamilton Creek Elementary School District is located on the east side of the Santiam River for the most part and has experienced a very stable population over the past five years. Because of housing development potential in the area, population is expected to increase.[33] The Hamilton Creek Elementary School is just under capacity at the

present time and can only accommodate approximately 60 new homes.[34]

With an apparent growth problem in some areas within the Lebanon Planning Area, the City planners have recommended two possible alternatives to alleviate the situation. One recommendation suggests that district boundaries be redrawn to facilitate uneven growth throughout the area. The second recommendation suggests that new schools be constructed, especially in areas where a large amount of residential land is available for building.[35]

The high school is the only immediate problem that would be complicated by the Tek development at the initial employment phase. All other schools in the area should be able to accommodate enrollment growth through 1985.

Open space needs within a community can partially be achieved by developed and undeveloped parks. Lebanon presently has eleven city parks, covering a total of 46.75 acres.[36] The Comprehensive Plan recommends that the city establish a standard for park development of 15 acres per 1,000 people, which would necessitate extensive development to bring up the current figure of approximately five acres per 1,000 people.[37] The Tek development will initially bring in between 312.5 and 437.5 new people into the city, which will further the need for development of new parks and facilities within them, especially in the southwest and southeast sections of the city, where population growth will be most pronounced.

Lebanon's public library has been experiencing crowding problems in the past few years, with no room for expansion within its present facility. According to Randal Ockey, the Director of the Public Library, any growth brought on by the Tek development could have both positive and negative impact on the facility. A positive impact might occur by bringing people into the area who have enjoyed more sophisticated libraries elsewhere and who might support a bond issue to expand the facility. The negative impact would simply be the increased crowding of the facility to a point considerably beyond capacity.[38]

Lebanon's Community Hospital is presently running just below capacity and plans for facility expansion are presently being considered. The hospital anticipates being able to take care of the additional people brought in by Tek in its initial phase. Only the emergency and radiology facilities are presently adequate to service the community beyond this phase.[39]

The fire and police departments in Lebanon have adequate room for expansion, both having either new or enlarged facilities. With increased population, additional fire substations will eventually be needed to more effectively service areas with high fire hazard and increased population density.[40] Additional personnel will be the only adjustment required of the police department as a result of the population growth related to the Tek plant.

Public Utilities

Public utilities impacted by the Tek development include sanitary sewers, waste water treatment, solid waste disposal, water, electric power, and telephone service (Table B-5).

Sanitary sewer facilities are not presently available on the proposed site, however an eight-inch line is located at the intersection of Hansard and Laurel Streets, and a thirty-inch trunk line is located at the intersection of Hansard and Harrison Streets. Depending on the flow needs of the Tek development, the topography of the site and the flow rate capacities of these lines, Tek could decide either to hook up to one of these two lines or build a separate mainline directly to the sewage disposal plant. The entire cost of extending service lines to the site will be paid by Tek unless a sufficient number of other customers will also utilize the new line.[41]

Tek has forecasted, from past experience, that during the first year of operation, their average flow rate for an eight-hour work shift will be 0.033 million gallons per day (mgd), with a peak flow rate of 0.120 mgd. In addition to this sanitary waste, industrial waste water may be discharged from the site if processing activities are developed. However, Tek has projected that there will be no industrial wastes at the time of initial employment.[42]

Expansion of Lebanon's Wastewater Treatment Plant has just been completed and is designed to service a city population of 15,000, which

is anticipated by 1995. The Tek development will have a total quantity of 11,000 gallons per day, which would have minimal impact upon this upgraded facility. If industrial processing activities are developed on the site, Tek will be required to pretreat the wastewater on site, in accordance with Environmental Protection Agency and Department of Environmental Quality rules and regulations.[43]

Solid waste disposal is carried out by the Lebanon Sanitation Company, who serves both the Albany and Lebanon areas. Their operation is very flexible to expansion, and therefore anticipate no problem in providing service to the area during the initial phase of the Tek development.[44] The Valley Landfill Company runs the disposal site and handles an average solid waste intake of 240,000 cubic yards per year. Because there is presently more than forty acres of unused space at the site, the company projects the lifespan of the facility to extend well past the year 2000. Tek has estimated an annual average volume of 3,800 cubic yards per year of solid waste, which would have minimal impact on the facility.[45]

Water supply to the Lebanon area is provided by the Pacific Power and Light Company (PP&L). Water out of the South Santiam River is treated in a facility capable of handling four mgd at the present time, however plans to double the capacity of this facility are underway and are expected to be finished by late summer of this year. Currently, Lebanon's water demand is approximately ten cubic feet per second,

with an average growth rate of five percent per year.[46] Tek projects a maximum domestic water demand, during its initial phase, of 25,000 gallons per day and a fire flow demand of 3,000 gallons per minute.[47] Because of this fire flow demand, a twelve-inch line minimum is required to provide both domestic water and fire protection for the Tek site. Cost of line extension will be entirely covered by Tek unless adequate revenue can be generated by other users of the new line. In any case, no building costs will be imposed upon existing rate payers.[48]

PP&L also supplies electric power to the Lebanon area, with a total transformer capacity of 74.9 mw. The city's total load is 53.1 mw, with an average 4.7% growth rate per year for the service. Tek anticipates a load of 1.4 mw during its initial phase, which would make a negligible impact on the facilities. In order to supply electricity to the Tek site it will be necessary to extend a distribution line about one quarter of a mile, the costs of which would be assessed in the same manner as for water service.[49]

Telephone service in Lebanon is computerized and has a present capacity of approximately 10,000 lines. There are currently 7200 lines in use in Lebanon, with a seven percent growth rate per year.[50] The sixty lines that Tek projects they will require during the first year of operation will have minimal impact on the facility. Toll and exchange cables that will be used to service the site, presently go through the property, a small portion of which will have to be relocated.[51]

ECONOMIC IMPACT

Employment and Income

Linn County's economy can be divided into two production sectors. One of these is the basic sector, which produces goods and services for consumers beyond the limits of the area. The other is the nonbasic sector, which is involved in the production and distribution of goods and services to satisfy the needs of the population of the county. Basic[52] employment in 1977 was 11,705, while nonbasic employment was 14,756.[53] The basic/nonbasic ratio using these figures is 1.0/1.3. The average basic income for the same year was $14,655, and the average nonbasic income was $8,972. The employment and income multipliers generated from this data follow:

Employment multiplier	2.26
Income multiplier	1.77[54]

This means that for every basic job in the county, 2.26 are created in the nonbasic sector, and for every salary dollar from a basic job, the local expenditures will create another $1.77 in nonbasic salaries. The basic industries are perhaps the most vital to the growth of the area, since they generate wealth from outside the county. Therefore, change in the employment and income of the basic sector will have a decided impact on total employment and income averages of the area.

Historically, Linn County has been very dependent upon the lumber and wood products industry. In Lebanon, the wood products industry

employs a vast majority of the local manufacturing laborers. The general trend today in the area indicates a decline in wood industry employment for at least the next two decades because of the dwindling supply of harvestable timber in Oregon. There also appears to be a more rapid increase in nonmanufacturing jobs than manufacturing jobs in the county, which means that the most available jobs are also lower paying, on the average.[55]

The refined indices of diversification in the manufacturing industries in Linn County and Lebanon clearly show the predominence of the wood products industry (Figure A-5). Assuming that the Tek plant is built and initially employs 500 people, it would have the effect of lowering Lebanon's refined index to a value closer to Linn County's.[56] Having an emphasis on just one type of industry, as one finds in this area, can be undesirable because of the problems encountered if that industry falters.[57] In the case of Lebanon, where nearly fifty percent of the labor force is employed in the declining wood industry, the problem appears to be especially acute.

High unemployment rates are also a feature of Linn County's economic situation. Annual unemployment averages for 1978 and 1979 in Linn County, were consistently higher than those for Oregon and the nation during those years (Table B-6).[58] In addition, the rates for comparable months in 1979 were higher in all cases than the 1978 rates, and the annual average in 1979 was about two percent higher.[59] During the

first five months of 1979, Linn County had the highest unemployment figures of any of the nine counties of the Willamette Valley, including metropolitan Portland.[60]

There are several reasons for the high unemployment rates occurring in Linn County. One is that many of the job positions in the county are seasonal, especially in the manufacturing industries, which means that many workers are unemployed during a portion of every year. Another reason is that since manufacturing is generally the key to overall economic growth for a region, Linn County's growth has considerably slowed down as a result of the slower increase in manufacturing jobs, and the economy is suffering. A third reason involves the large increase in population and labor force, much of it due to in-migration, which is growing faster than the number of new jobs. And the last reason is that there has been a general slowdown in the national economy, which affects unemployment rates throughout the state.[61]

During the 1978-1979 Fiscal Year, a total of 19,834 job applicants were reported in Linn County (Table B-7). Of these, there was a very high number of entry-level applicants seeking benchwork occupations.[62] These jobs tend to be higher paying and it is expected that the applicants seeking these benchwork jobs would be especially interested in obtaining a position at Tektronix.[63]

The situation in Corvallis after Hewlett-Packard began operation

in 1976 can be used as an example to show one possible employment impact that Tek could have on the Lebanon area. By 1978, the raw labor force participation rate in Benton County had jumped much higher than in previous years.[64] What this indicated was that the number of people making up the labor force was increasing at a much more rapid pace than the population. This phenomenon was probably a result of the job opportunities for second income workers that were created by Hewlett-Packard and also a response to the national economic situation at the time. In Lebanon, the job conditions are slightly different than those in Corvallis because of the predominance of the wood products industry, which employs many seasonal workers who might seek a job at Tek to obtain better working conditions. However, some similarities might occur between the two cities. One is that Tek is expected to hire a number of electronics professionals from outside the Lebanon area just as Hewlett-Packard has done in Corvallis; and secondly, Tek might offer jobs that will be attractive to a number of local people who are not presently in the labor force. The net result might be that the labor force participation rate in Lebanon would also increase more rapidly relative to its population, as was the case in Corvallis.

In conclusion, three conditions are projected to occur in Lebanon at the time of initial employment of the plant, which will determine the amount of local labor supply available to the plant. One is that many local nonmanufacturing workers and seasonal manufacturing workers

might consider transferring to Tek in order to obtain more stable working conditions, job security, higher salaries, better health benefits and a higher social status. A second condition projected is a high unemployment rate in the area, along with a big demand for benchwork occupations. And third, an increase in the labor force participation rate is expected. As a result, there should be no shortages of applicants for the initial 500 positions at Tek, even if all positions were to be filled by the local labor force. These new positions will have the effect of stimulating the economy and stabilizing the basic sector in Lebanon.

Taxes and Municipal Finances

Construction of the Tek plant will directly effect local expenditures for public improvements, facilities and services. Though the plant will increase the city's tax base, the increased population directly related to the development could be an economic burden on the existing population. According to a study concerning the impact that Hewlett-Packard has made on the City of Corvallis, done by the Corvallis Citizens Research Group in February, 1979, accelerated growth related to industrial expansion is very expensive to the local taxpayer because the additional revenue generated by the greater tax base does not cover the costs required to maintain the livability of the area.[65]

One direct impact of the proposed plant construction is the additional wealth to the city which increases its tax base. The land value of the project site ($1,225,000) added to the roughly estimated land

improvements ($7,000,000), comes to a total of $8,225,000 of real property added to the City of Lebanon during the initial phase of development.[66] Using the 1980 Lebanon tax rate,[67] Tek would be liable for $164,665. In addition, new employee home development and new commercial businesses will increase the tax base and contribute to the city's total tax revenue. Six jurisdictions are financed by this tax revenue, including the County, the City and several school and service districts.[68]

County and City expenditures will be increased in order to adequately serve the new Tek plant and the additional homes and businesses generated by the plant development. The community services heavily impacted by the anticipated population growth include schools, parks, library, community hospital, transportation improvements and local government.

School financing is complicated by the fact that the plant site is located in only one of the ten elementary school districts in the Lebanon Planning Area. All elementary schools in the city have some room for expansion within their present facility, however, they may not be able to sufficiently accommodate a large enrollment increase and still maintain their present tax rate.[69] The Lebanon Union High School is already operating beyond its capacity and will need a bond issue to improve the facility. Its tax rate may also be increased, although Tek will be directly contributing to this district.

Increased county and city tax revenue could go toward new parks,

an expanded public library and community hospital, improvements to the local transportation network, and fire and police protection, all of which may be needed when the local population is increased. Some of these improvements may be funded by local bond issues or State and Federal revenue-sharing programs, which help to reduce the pressure on local tax rates.

Recent studies indicate that new people moving into an area are a financial burden on the existing population.[70] In 1973, the U.S. Chamber of Commerce reported that "...local governments are now aware that the typical new individual household costs more in services than it pays the government in taxes."[71] There is no doubt that it will be expensive to adequately provide for the population growth stimulated by the Tek development at both the county and city level. It is especially true in Lebanon, where many community facilities are presently near their design capacity.

PHYSICAL IMPACT

Land Use

The 253-acre site that Tek has proposed to purchase is presently under rye grass seed cultivation and has been for many years. The production of vegetables, fruit, nut and nursery crops as well as livestock and seed crops are well suited to the soil and climate conditions of the Lebanon area. Agriculture in this area represents most of the crops

and livestock commodities grown throughout Linn County.[72]

The fairly level topography of the site makes it a favorable site for most land uses (Figure A-6). The local soils have a high clay and silt content, with sand increasing with depth. There exists a very shallow groundwater table in the area of the site, which has the effect of reducing the absorption rate of the soil. As a result, during prolonged precipitation events, the area experiences severe drainage problems, such as surface ponding.[73]

The site is located at the headwaters of the Grand Prairie subdistrict #2, which consists of the watersheds of Cox, Burkhart and Truax Creeks and covers a total area of 23,100 acres. Residents of the district approved a bond issue in April of 1979, to partially finance the improvement of the three waterways, in order to provide better drainage, improved flood control and a lower water table for the area.[74]

With the use of the U. S. Department of Agriculture Land Capability Classification system, the Soil Conservation Service has defined the agricultural land on the site in the following manner.

TABLE 2

Soil Classification of the Proposed Tektronix Site

Class	Area (acres)	Percent of Site
I	21.8	9
II	95.3	38
III	106.5	42
IV	28.8	11
Total	252.4	100

SOURCE: "Tektronix Development Study," p. 77.

The Land Conservation and Development Commission (LCDC) classifies these soils as agricultural land and suggests that the conversion of rural farm land to urbanizable land be based upon the following considerations:

> "(1) environmental, energy, social and economic consequences; (2) demonstrated need consistent with LCDC goals; (3) unavailability of an alternative suitable location for the requested use; (4) compatibility of the proposed use with related agricultural land; and (5) the retention of Class I, II, III, and IV soils in farm use."[75]

In view of these guidelines, the Lebanon planners have drawn up a comprehensive plan that attempts to provide for compact, contiguous urban development, and the minimization of urban sprawl, loss of prime farm land and potential conflicts between urban and agricultural uses.[76] The Comprehensive Plan has set aside a strip of light industrial land

along the west side of town to direct residential growth to the south (Figure A-1). This is intended also to act as a buffer between the west side residential and agricultural uses that can conflict.[77]

Though, at the present time the site is being used for the production of grass seed, with the improvements provided by the Grand Prairie Water Project, the land may become suitable for more varied uses. Improved drainage is expected to give farmers the opportunity to grow crop alternatives, to increase their crop yields, and to possibly irrigate during the summer months. Flood control and more efficient drainage of surface runoff on roads, driveways, and yards will be provided for urbanized areas. Water table levels will be lowered to improve the drainage conditions, lessen the maintenance on roads, and to provide drainage outlets for new development in the urban growth areas around Albany and Lebanon.[78]

Because the site is well-suited for agricultural use, many local people are opposed to its conversion to light industrial use. The true value of this agricultural land is difficult to assess for two reasons. One is the fact that not all agricultural land outside the Lebanon area is capable of economically producing the same crops that can be grown in the Lebanon area because of the prime soil conditions, a 221-day growing season, and an average annual precipitation of fifty inches found here. Secondly, it is not possible to estimate the need of prime agricultural land in the long-term future. As a result, it is difficult, at best, to

assess the full impact of this irreversible land use conversion at any phase of the Tek development.

Air Quality

The mixing of the broad airshed in the west Linn County area keeps the air pollution level low, except during periods of heavy field burning. The Environmental Protection Agency publication AP-42 estimated total annual emissions for Linn County at 22,237 tons for the 1974 year. This is from all pollution sources exclusive of field burning contaminants (Table B-8).[79]

The Tek development could contribute to air pollution in three ways: (1) auto emissions by employee household members, visitors to the plant, and service delivery and material handling vehicles, (2) natural gas emissions, if the plant is heated by this fuel, and (3) processing emissions, if manufacturing processes are carried out at the site.

In the first case, it would be possible to estimate total auto emissions generated by the plant development if the following information were known: (1) the location of employee residences, (2) the length of trips by the families of employees (average number of trips are shown in Table 1), (3) the origins of visitors to the plant and vehicles providing services to the plant, and (4) the number of employees using alternate means of transportation to get to work.

Air pollution emissions may not occur by the other two generators

of pollution, natural gas heating and manufacturing processing. This is because Tek has projected that these activities will not be carried out during the first year of plant operation, though they are both being considered for a later period in the plant operation.[80]

Water Quality

The proposed Tek site has a very shallow groundwater table underlying it, which decreases the absorption rate of the soil and results in poor drainage and surface ponding.[81] If the proposed plant is built, these subsurface conditions will slow down the runoff from paved surfaces and buildings, unless ditches or culverts are constructed to guide the runoff to the Burkhart Creek located along the southeast border of the site (Figure A-6). The headwaters of this creek is located on the site, and from there it flows northwest to the Willamette River north of Albany.

Water pollution produced on site may be generated from two sources. One of these is the increased runoff from paved surfaces. The parking lot, for instance, will collect rubber, asbestos, hydrocarbons, lead, sulfuric acid and other vehicle emissions that may enter watercourses on or near the site. The second source of pollution is industrial wastes, such as ammonia, chromium, copper, cyanide, nickel and zinc that may be released from the plant itself and enter the water system nearby.

Because of the location of this site at the headwaters of a farming

district, where many people use wells to provide their domestic water supply, it will be extremely important to enforce strict regulations regarding vehicle emission and industrial waste discharge, although the latter may not be generated during the initial phase of plant operation.

CONCLUSIONS

Since Tek has not issued specific development plans for the proposed project site, it is not possible to assess full impact on the Lebanon community during the plant's initial phase of operation. However, in view of the information Tek has provided regarding preliminary project plans, general trends of community impact can be realized.

In terms of social impact, 500 Tek employees could add as many as 875 new people to the west Linn County area. These new people could require as many as 350 new homes, assuming an average household size of 2.5. The transportation network in the City of Lebanon is presently unsafe and will require improvements in order to handle anticipated in-migration associated with the proposed plant. Of the many community facilities in Lebanon, schools will be the most heavily taxed by increased population, however, the city's parks, public library, and hospital will be in need of expansion in the near future. Public utilities, on the whole, are capable of servicing the projected plant and the additional homes and businesses built during the initial phase of the Tek development.

Initially, Tek will effect the economic structure of the city by diversifying the basic sector, though over the long run, Lebanon may simply be transferring dependence from one type of industry to a single employer of another type, which would be directly contrary to the goal of diversification.[82] Tek may have the effect of reducing the area's high unemployment rate, however, it is expected that people not presently in the labor force may be attracted to jobs offered at the plant, which would not help to lower the unemployment rate. Tek will have a positive effect on the tax base of the city by adding considerable wealth to it; however, County and City expenditures are expected to go up proportional to the population growth rate and may necessitate increasing the tax rate or passing bond issues to maintain the livability of the area.

In terms of physical impact on the area, 253 acres of prime agricultural land will be converted to industrial use, though only eighteen acres will be initially built upon, and only 67 acres will be needed in total, according to Tek.[83] Since 47% of the site consists of Class I and II soils, the loss of prime farmland will be one direct impact. Auto emissions generated by the Tek plant may possibly be the single source of air pollution during Phase 1 of development, and surface runoff from the parking lot will probably be the main source of pollution to the groundwater in the area.

Although the community effects outlined in this study only cover possible impact occurring during the first year of the proposed plant's

operation, this information does indicate general types and severity of impact that might occur at a later stage of plant development. If and when the proposed plant is constructed, this initial impact inventory can also be used as a basis for assessing actual impact on the Lebanon area.

FOOTNOTES

[1]Bert Gredvig, Corporate Facilities Manager, Tektronix, Testimony at Lebanon City Council Public Hearing, 10 October 1979.

[2]The Friends of Linn County is a local non-profit corporation of over fifty members residing in and around the Lebanon area, and in other parts ot the county.

[3]Tektronix, Inc., "Project Notebook: Tektronix Development Study, Lebanon, Oregon," September, 1979, p. 1.

[4]Ibid., p. 28.

[5]Ibid.

[6]Oregon District 4 Council of Governments for Linn and Benton Counties, "Linn-Benton Economic Data Base," May, 1978, Exhibit G-1.

[7]Tektronix, "Tektronix Development Study," p. 29.

[8]The gravity model is expressed:

$$I = \frac{P_1 P_2}{t}$$

where:
I is the measure of relative interaction between the County Census Division and Lebanon;
P_1 is the population of the County Census Division;
P_2 is the population of Lebanon;
and t is the travel time between the County Census Division and Lebanon.

[9]Ed Solari, Editor of Corvallis Citizens Research Group, personal interview, 13 February 1980.

[10]Tektronix, "Tektronix Development Study," p. 32.

[11]Lebanon Planning Department, "Lebanon, Oregon Comprehensive Plan," 1979, p. 2.10-13.

[12]Ibid., p. 2.10-14.

[13]The 1990 household size projections are proportional to those projected for the state as a whole. Household size is estimated to decrease by 16.32 percent between 1970 and 1990.

[14]Council of Governments, "Linn-Benton Economic Data Base," Exhibit H-2.

[15]Susan Stone, Corporate Community Director, Tektronix, personal interview, Beaverton, Oregon, 4 October 1979.

[16]Tektronix, "Tektronix Development Study," p. 24.

[17]Lebanon Planning Dept., "Lebanon Comprehensive Plan," p. 2.30-2.

[18]Marjorie Nofziger, Testimony at Lebanon City Council Public Hearing, 10 October 1979.

[19]Lebanon Engineering Department, "Traffic Engineering Program for The City of Lebanon, Oregon," January, 1979, p. 3-3.

[20]Oregon Traffic Safety Commission, "Highway Safety Plan, Fiscal Years 1980-1985," Salem, 1979, p. 15.

[21]These recommendations include: (1) the reclassification and rerouting of present streets and highways, (2) development of a "loop arterial" or a highway bypass on the west side of the city, and (3) upgrading of signs and markers used to regulate the traffic.

[22]Lebanon Engineering Dept., "Traffic Engineering Program," p. 3-8.

[23]Institute of Transportation Engineers, "Trip Generation," Arlington, Virginia, Updated 1979.

[24]Tektronix, "Tektronix Development Study," p. 23.

[25]Solari, Editor for Corvallis Citizens Research Group, 13 February 1980.

[26]Lebanon Planning Dept., "Lebanon Comprehensive Plan," p. 2.50-1.

[27]Steve Wisely, Superintendent, Lebanon Public Schools, telephone interview, 11 January 1980.

[28]Ibid.

[29]Lebanon Planning Dept., "Lebanon Comprehensive Plan," p. 2.50-2.

[30]This number was generated by assuming .5 K-8 students per new single-family home and no children in multi-family units.

[31]Tektronix, "Tektronix Development Study," p. 58.

[32]Allen Barker, Gore Elementary School District, telephone interview, 11 January 1980.

[33]Tom Tomlinson, Hamilton Creek Elementary School District, telephone interview, 10 January 1980.

[34]The calculation assumes .4 K-5 students per single-family home and no students per multi-family unit.

[35]Lebanon Planning Dept., "Lebanon Comprehensive Plan," p. 2.50-4.

[36]Ibid., p. 2.50-5.

[37]Ibid., p. 2.50-6.

[38]Randal Ockey, Director of Lebanon Public Library, telephone interview, 11 January 1980.

[39] Cathy Shanks, Director of Development and Community Relations, Lebanon Community Hospital, telephone interview, 11 January 1980.

[40] Lebanon Planning Dept., "Lebanon Comprehensive Plan," p. 2.50-10, 11.

[41] Jim Ruef, Lebanon Engineering Department, telephone interview, 15 January 1980.

[42] Tektronix, "Tektronix Development Study," p. 62.

[43] Ibid., p. 64.

[44] Doug Kooyman, Lebanon Sanitation Company, telephone interview, 14 January 1980.

[45] Bill Webber, Director of Valley Land Fills, Inc., telephone interview, 14 January 1980.

[46] Bill Morris, Lebanon Manager, Pacific Power and Light Company, telephone interview, 14 January 1980.

[47] Tektronix, "Tektronix Development Study," p. 66.

[48] Morris, Pacific Power and Light Co., 14 January 1980.

[49] Ibid.

[50] Mr. Anderson, Lebanon Supervisor, Northwestern Telephone Systems, Inc., telephone interview, 14 January 1980.

[51] Bob Eversol, Engineer, Northwestern Telephone Systems, Inc., telephone interview, 14 January 1980.

[52] Basic sector includes all employment in agriculture, forest and fishing, mining, manufacturing, and Federal and State government.

[53] Tektronix, "Tektronix Development Study," p. 21.

[54] Ibid., p. 22.

[55] Employment Division, Department of Human Resources, "Annual Economic Report for Linn County," 1979, p. 4.

[56] The refined index is defined here based on the work of Ray M. Northam:

$$RI = \frac{CI_{sa} - CI_{max}}{CI_{min} - CI_{max}}$$

where:
RI is the refined index of diversification;
CI_{sa} is the crude index of the study area;
CI_{max} is the crude index of greatest diversification;
and CI_{min} is the crude index of least diversification.
The nearer the RI is to 1.00, the less the degree of diversification.
The nearer the RI is to 0.00, the greater the degree of diversification.
The calculated index values are the following:

Linn County	0.847
Lebanon	0.960
Lebanon with Tek	0.932

[57] Ray M. Northam, Urban Geography, 2nd edition (New York: John Wiley and Sons, Inc., 1979), p. 214.

[58] Unemployment statistics are not available at the city level.

[59] Michael Murphy, Area Economist for Lincoln, Benton and Linn Counties, Employment Division, personal interview, 28 January 1980.

[60] Tektronix, "Tektronix Development Study," p. 12.

[61] Employment Division, "Annual Economic Report," p. 3.

[62] Benchwork occupations consist of those manufacturing jobs involved in fabrication and assembly.

[63]Murphy, Area Economist, 28 January 1980.

[64]Ibid.

[65]Corvallis Citizens Research Group, "Impact of Recent Industrial Expansion on Employment and Local Governmental Costs in Benton County," February 1979, p. 4.

[66]Tektronix, "Tektronix Development Study," p. 26.

[67]Lebanon taxpayers living within the city limits pay a tax rate of $20.02 per $1,000 of assessed valuation for 1980, which is $.90 higher than the previous year's rate of $19.12.

[68]These six jurisdictions are Linn County, $.84; Linn-Benton Educational Service District, $.40; Lebanon Elementary School District, $9.14; Lebanon Union High School District, $4.07; City of Lebanon, $4.53; and Linn-Benton Community College, $1.04.

[69]Tektronix, "Tektronix Development Study," p. 27.

[70]Corvallis Citizens Research Group, "Impact of Recent Industrial Expansion," p. 3.

[71]Ibid.

[72]Lebanon Area Chamber of Commerce, "The Lebanon Story," 1978, p. 19.

[73]Tektronix, "Tektronix Development Study," p. 79.

[74]Grand Prairie Water Control District, "A Flood Control and Drainage Project for You," Albany, Oregon, 1973.

[75]Land Conservation and Development Commission, "State-Wide Planning Goals and Guidelines," 27 December 1974, p. 13.

[76]Lebanon Planning Dept., "Lebanon Comprehensive Plan," p. 2.10-2.

[77]Ibid., p. 2.10=9.

[78]Grand Prairie District, "A Flood Control and Drainage Project for You."

[79]Special Ad Hoc Committee, "An Assessment of the Impact of the Proposed Hewlett-Packard Facility on the City of Corvallis," Eugene, Oregon, September 1974, p. 85.

[80]Tektronix, "Tektronix Development Study," pp. 62 & 70.

[81]Ibid., p. 79.

[82]Robert Taylor, Attorney for Friends of Linn County, Testimony at Lebanon City Council Public Hearing, 10 October 1979.

[83]Tektronix, "Tektronix Development Study," p. 80.

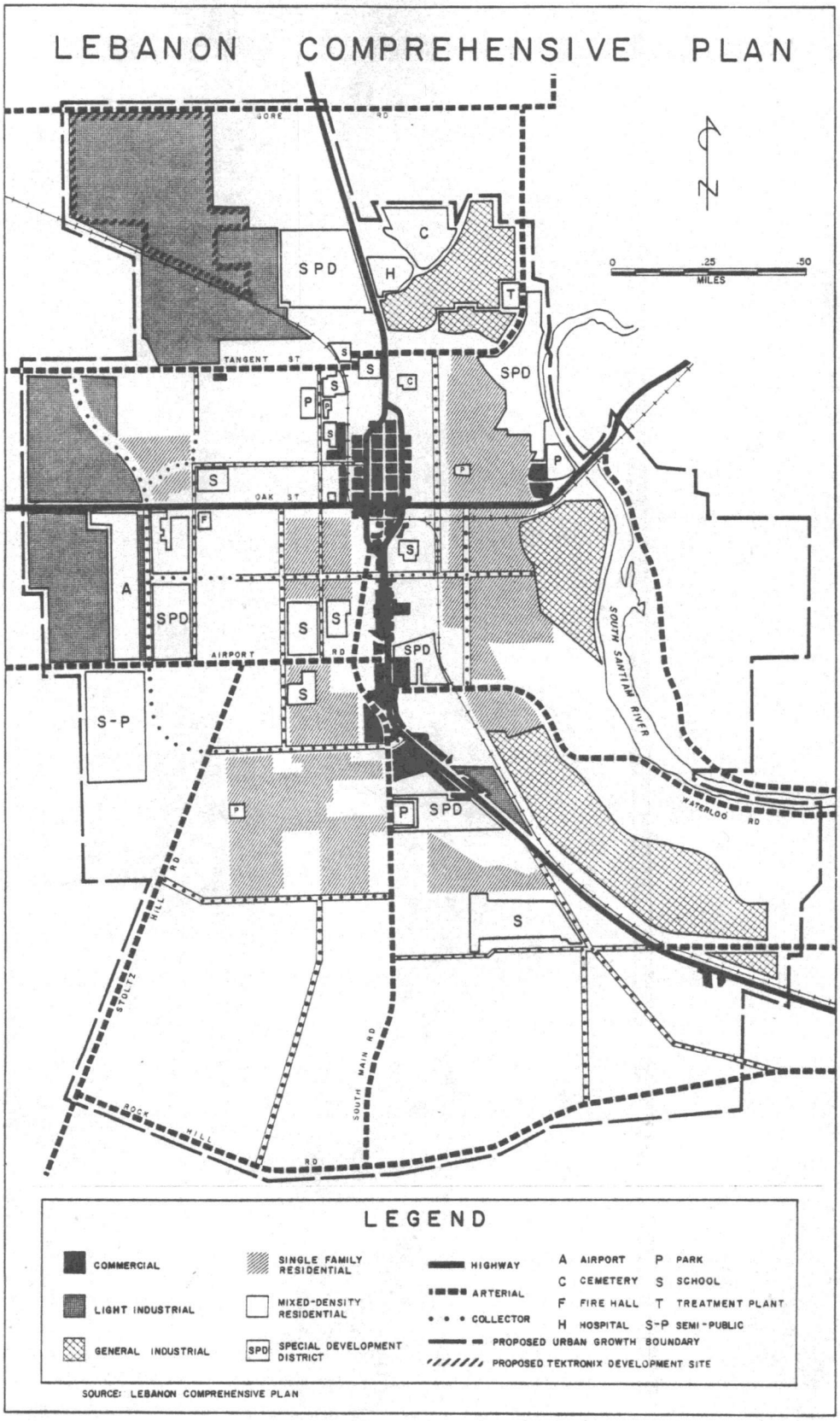


FIGURE 1. LEBANON COMPREHENSIVE PLAN

APPENDIX A

MAPS AND GRAPHS

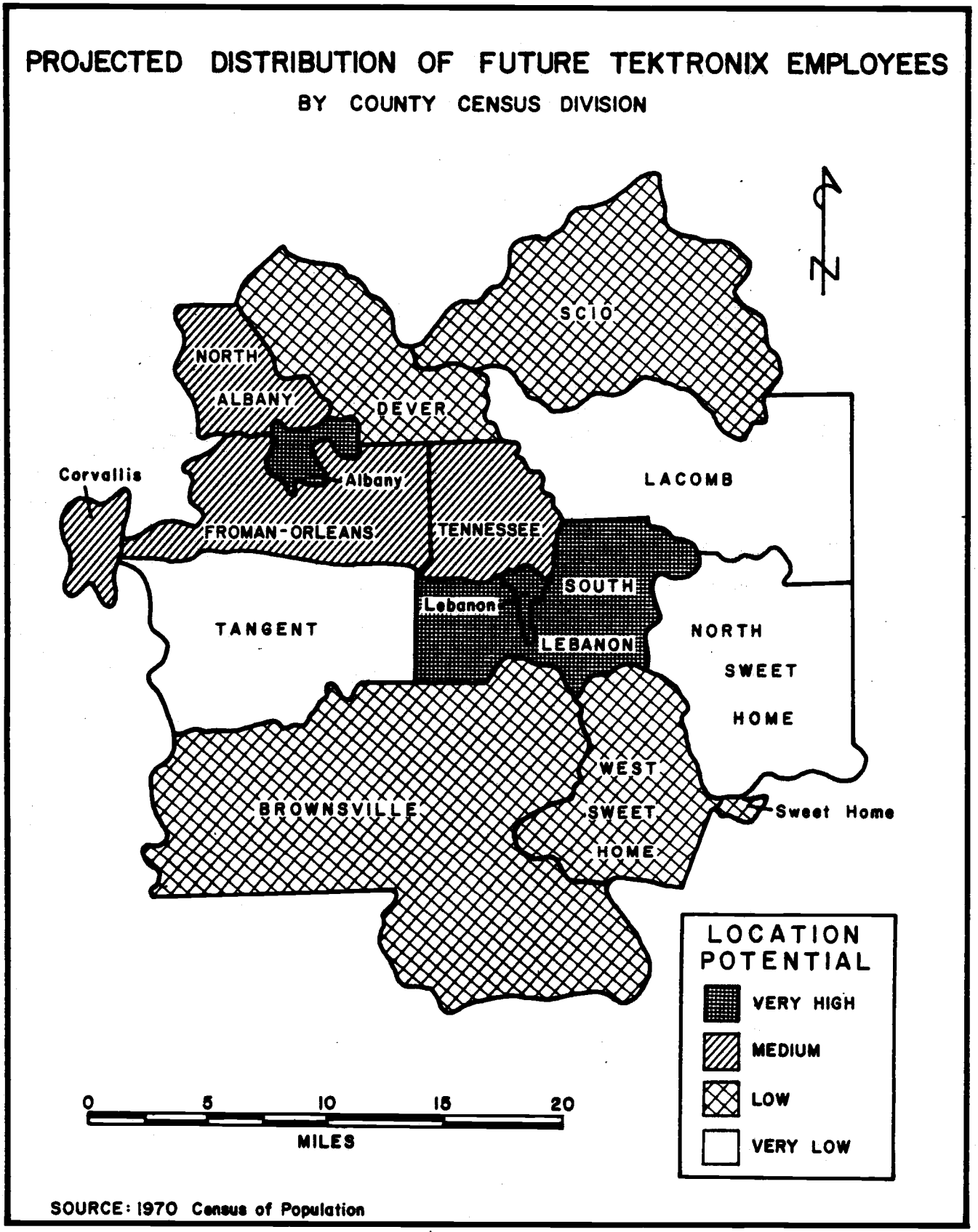


FIGURE 2. PROJECTED DISTRIBUTION OF FUTURE TEKTRONIX EMPLOYEES

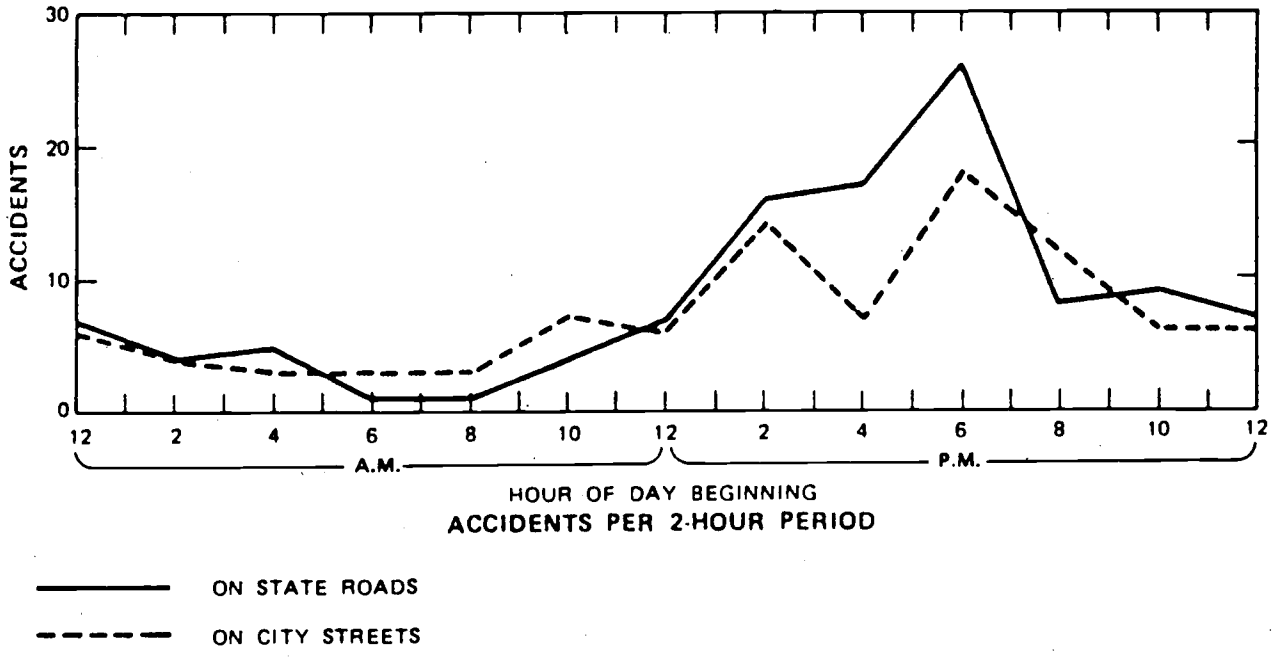


FIGURE 3. DAILY ACCIDENT RATES IN LEBANON

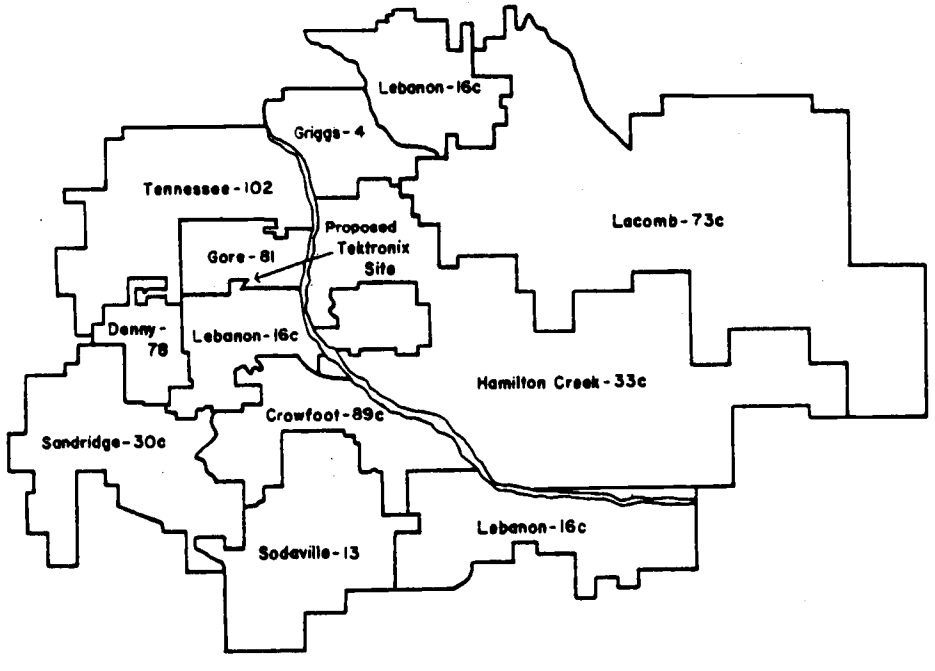


FIGURE 4. SCHOOL DISTRICTS SERVING LEBANON

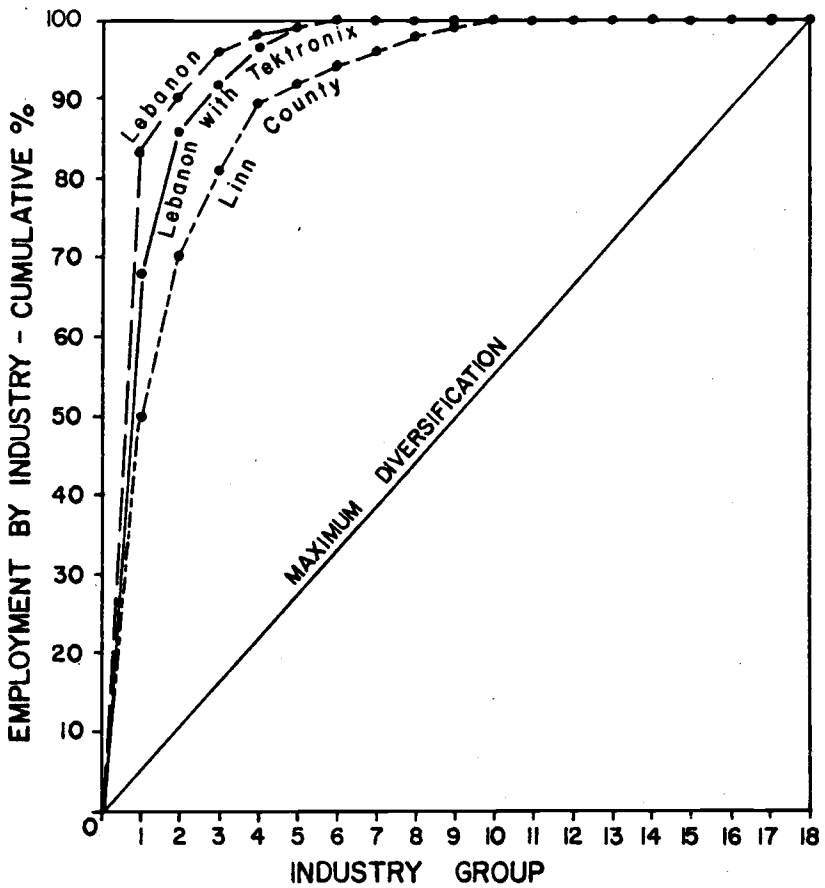


FIGURE 5. DIVERSIFICATION CURVES FOR MANUFACTURING INDUSTRIES

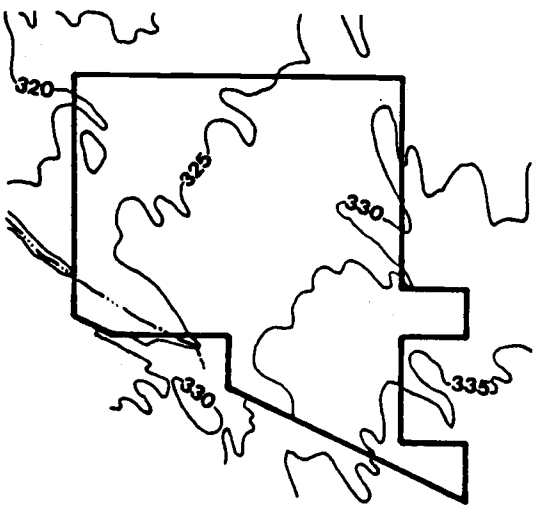


FIGURE 6. TOPOGRAPHY OF THE PROPOSED TEKTRONIX SITE, IN FEET ABOVE M. S. L.

APPENDIX B

TABLES

TABLE 1. TIMING OF MAJOR EVENTS

Date	Event
5 October 1978	Lebanon Planning Commission proposes the extension of the Urban Growth Boundary to include the proposed Tektronix site and rezoning to a light industrial classification.
20 February 1979	Tek signs purchase agreements with the Delmar Connett family (who own 157 acres of the site), the Clarnell Nichols family (88 acres), and the Lebanon Industrial Development Corporation (8 acres).
28 February 1979	Lebanon City Council allows the city to apply to Linn County for expansion of their UGB, regarding the proposed Tek site only.
20 March 1979	Linn County Planning Commissioners vote 6-1 in favor of the Lebanon UGB change, regarding the inclusion of the proposed Tek site only.
11 April 1979	Linn County Board of Commissioners vote unanimously in favor of including the proposed plant site within the Lebanon UGB, in addition to the entire right-of-way of Gore Drive.
31 August 1979	Tek submits a formal request to the Lebanon Planning Commission for annexation of the plant site into the city.
20 September 1979	Lebanon Planning Commission submits a favorable recommendation to the Lebanon City Council regarding the annexation and rezoning of the site.
10 October 1979	Following a four-hour public hearing, the Lebanon City Council decides to delay final decision on the annexation request for one week.

TABLE 1. continued

Date	Event
17 October 1979	Lebanon City Council vote unanimously to annex the proposed plant site into the city and zone to light industry.
15 November 1979	The Friends of Linn County file a notice of intent to appeal the annexation with the Oregon Land Use Board of Appeals (LUBA) in Salem.
5 December 1979	Lebanon submits the records of the 20 September Planning Commission hearing and the 17 October City Council hearing to the LUBA.
22 December 1979	Friends of Linn County send their formal appeal and 32-page brief to the LUBA.
25 January 1980	Tek and the city of Lebanon submit a joint brief to the LUBA.
15 February 1980	Deadline for LUBA to make a decision on the annexation request.

New Resident Population / Imported Tek employees	MULTIPLIERS 2.5	3.5
125 within Lebanon	312.5	437.5
125 outside Lebanon	312.5	437.5
TOTAL	625	875

TABLE 2. NEW LOCAL RESIDENT POPULATION.

County Census Division	1970	1980[a]	1985[a]
Albany	18,181	28,072[b]	33,648[b]
Brownsville	3,673	4,393	4,686
Corvallis	35,153	42,877[c]	48,987[c]
Dever	3,739	5,015	5,763
Froman-Orleans	4,885	6,838	7,858
Lacomb	2,022	2,566	2,826
Lebanon	6,636	9,844[d]	11,395[d]
North Albany	3,990	7,961	8,870
N. Sweet Home	1,400	1,715	1,832
Scio	2,862	3,910	4,235
South Lebanon	8,653	10,732	11,690
Sweet Home	3,799	7,580	8,320
Tangent	2,035	2,735	3,143
Tennessee	1,478	2,100	2,312
W. Sweet Home	2,358	2,715	2,901
TOTALS	100,864	139,053	158,466
Totals Outside Lebanon	94,228	129,209	147,071

[a]Population projections (except where noted) were generated by extrapolating projections made by District 4 Council of Governments. The COG projections are based on employment projections that have been modified according to certain criteria about each district subarea.

[b]This is assuming a 1979 population of 27,073 and a 3.69 percent growth rate.

[c]This is assuming a 1979 population of 41,750 and a 2.7 percent growth rate.

[d]This is assuming a 1979 population of 9,560 and a 2.97 percent growth rate.

SOURCES: U.S. Dept. of Commerce, 1970 Census of Population, Vol. 1, Part 39, Oregon. January, 1973.

Oregon District 4 Council of Governments for Linn and Benton Counties, "Linn-Benton Economic Data Base." May, 1978. Exhibit G-1.

TABLE 3. POPULATION PROJECTIONS BY COUNTY CENSUS DIVISION

School	District #	January 1980 Enrollment	Desirable Capacity	Available Seating
Lebanon Union High	1	1555	1450	-105
Lebanon Middle	16c	520	600	80
Santiam Elementary	16c	184	250	66
Green Acres Elementary	16c	384	425	41
Queen Ann Elementary	16c	261	325	64
Cascades Elementary	16c	249	400	151
Fairview Elementary	16c	65	95	30
Crowfoot Elementary	89c	240	300	60
Seven Oaks Middle	89c	260	350	90
Waterloo Primary	89c	149	200	51
Gore Elementary	81	71	95	24
Hamilton Creek Elementary	33	237	250	13

SOURCE: Lebanon, Crowfoot, Gore and Hamilton Creek School District offices.

TABLE 4. SCHOOL ENROLLMENTS IN LEBANON

Public Utility	Initial Phase of Development
Domestic Water	25,000 gpd (maximum daily flow)
Process Water	-0-
Sanitary Wastewater	
Total Quantity	11,000 gpd
Average Flow Rate 8-hr shift	0.033 mgd
Peak Flow Rate 8-hr shift	0.120 mgd
Industrial Process Wastewater	
Total Quantity	-0-
Average Flow over 8-hr shift	-0-
Peak Flow over 8-hr shift	-0-
Electrical Power	1.4 mw
Solid Waste	3,800 cu. yds/year
Telephone	60 lines

SOURCE: "Tektronix Development Study," p. 3.

TABLE 5. PUBLIC UTILITY REQUIREMENTS FOR TEKTRONIX DEVELOPMENT.

	Linn		Oregon		U.S.	
	1978	1979	1978	1979	1978	1979
January	9.1	12.3	7.6	8.3	7.0	6.4
February	8.8	12.1	7.3	7.9	6.9	6.4
March	8.1	9.9	6.7	7.5	6.6	6.1
April	7.6	10.1	6.3	7.1	5.8	5.5
May	7.0	9.5	5.8	6.7	5.5	5.2
June	6.7	8.2	5.7	6.4	6.2	6.0
July	6.6	8.5	5.6	6.6	6.3	5.8
August	6.5	8.5	5.2	6.5	5.8	5.9
September	6.4	8.0	5.2	6.1	5.7	5.6
October	5.7	7.9	5.2	6.3	5.4	5.6
November	7.6	8.5	6.0	7.1	5.5	5.6
December	8.5	9.4*	6.0	7.6*	5.6	5.6
Annual Average	7.4	9.4*	6.1	7.0*	6.0	5.8

*Preliminary

SOURCE: Michael Murphy, Area Economist, personal interview, 28 January 1980.

TABLE 6. UNEMPLOYMENT RATES (UNADJUSTED) FOR LINN COUNTY, OREGON AND U.S.

Occupations	Total Applicants	%	Entry Level Applicants*	%
Professional, Tech., & Managerial	1,430	7.2	272	3.8
Clerical & Sales	4,301	21.6	1,181	16.6
Service	2,218	11.2	473	6.6
Ag., Fishery, Forestry & Related	668	3.4	176	2.5
Processing	2,853	14.4	1,687	23.7
Machine Trades	1,589	8.0	600	8.4
Benchwork	2,654	13.4	1,813	25.4
Structural Work	2,123	10.7	524	7.3
Miscellaneous	1,998	10.1	410	5.7
TOTAL	19,834	100.0	7,136	100.0

*Job applicants have been in the occupation one month or less.

SOURCE: Employment Division, "Annual Economic Report for Linn County," 1979.

TABLE 7. LINN COUNTY JOB APPLICANTS.
October 1, 1978 - September 31, 1979.

Pollutant	Linn County
Organic	3,746
Particulate	5,875
Nitrogen Oxide	6,223
Sulfur Dioxide	2,464
Carbon Monoxide	3,929
TOTAL	22,237

SOURCE: Special Ad Hoc Committee, "An Assessment of the Impact of the Proposed Hewlett-Packard Facility on the City of Corvallis," p. 85.

TABLE 8. 1974 AIR POLLUTION LEVELS, IN TONS PER YEAR.

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