



TO: Rick Donnelly  
FROM: Larry Conrad  
DATE: 28 April 1997  
RE: Data for Land Use in the TLUMIP Project  
CC: Bill Upton (ODOT), Pat Costinett

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The following memo contains a brief discussion of the basis for the model zones used by the state wide model and an overview of the land use and employment data that has been gathered for this project. In addition, there is a brief description of some other data that was gathered along with the model data at the Census Tract Level and attached data dictionary.

### **Model Zone Structure for the Statewide Model — Census Tract Based**

A stated goal of the TLUMIP Project is the development of a model that has a total of 150 internal and external zones. In addition, the model should use, if possible, the analysis districts of the four MPOs that are participating in the project - Metro, MVCOG, LCOG and RVCOG. Finally the model zones need to be based on a geography that is commonly used for the collection of data.

The three best geographies that are commonly available are counties, ZIP Codes and census tracts. Counties were not chosen as the base geography for the model zones because there are only 36 of them in Oregon. If the model zones were based on counties, the model would not have the 150 zone that are desired and the MPO analysis districts would not be used because the model data would be aggregated at the county level.

The two remaining geographies, census tract and ZIP code, have more than 600 individual polygons in the state and can be aggregated into model zones. Census tracts are structured so that they are entirely contained within the boundaries of individual counties. ZIP Codes generally stay within the boundaries of a single county, but in a least eight case ZIP codes cross county lines. They also contain a number of codes, post office boxes, that have no spatial component. Census Tract boundaries are generally more stable than ZIP code boundaries. Metro twenty analysis district boundaries are based on census tract boundaries, while MVCOG, LCOG and RV COG are not. Given the previous information and the fact that there is more data available at the census tract level, it was decided to base the statewide model zones on census tract boundaries. In the case of the MVCOG, LCOG and RVCOG districts, the model zones approximate the MPO districts but are based on the census tract boundaries.

Data gathered for the study is generally available either by census tract or Zip code. We established an equivalency table for moving data from the Zip code geography to the cen-

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sus tract geography.

### **Traditional Land Use Data and the Modeling Process**

Traditional land use planning focuses on data that is measured in terms such as the number acres of vacant or developed land zoned for light industrial use. It is possible to include the number of acres of vacant land in the TRANUS data base and use it as a direct input to the Statewide model. We have elected not to do so for the following reasons.

The first reason is the scale of the model and the type of data that is used directly by TRANUS for most of its calculations. In the statewide model, all of the model zones are relative large and have room for intrazonal growth. The model will not disaggregate allocations or projections below the zone level. Although there are several cities in most model zones, the model will act on the land market as if they were one city.

The data used by the model includes the number of households by income type, the number of housing units by sector (single family or multifamily), the number of jobs by economic sector and average income level, and the price of vacant land and developed land. The model will project the number of households and the number of employees for each model zone. These projections can be converted into the average amount of land to be consumed through post model processing based on the average amount of land consumed by each housing sector. This post processing will allow the use of different average housing densities for each housing sector in each model zone and will account for the local variation in residential land consumption patterns.

The land consumption patterns of commercial and industrial sectors will require some additional analysis. Data is available at the model zone level on the number of employees by economic sector in 1995 and at the county level on the number of square feet of industrial and commercial structures by sector. The model zones aggregate into counties and the economic sectors can be aggregated into the building sectors. Using this data, a model will be created to estimate the square feet of building per employee by sector. This will allow the calculation of the amount of building area that will be needed for the projected employment. Building area by economic sector can be translated into acres of land required using the average development density allowed by local jurisdictions.

The second factor that lead to this decision not to use vacant acres is that, generally, the jurisdictions in each of the model zones are expected to respond to increased growth by increasing the amount of land available for urban development. The land markets are expected to operate in this manner due to the requirements of HB2709 (1995 Legislative Session) which mandates that each city with an urban growth boundary - all of the cities in Oregon - maintain a twenty year supply of buildable land. During a cities Periodic Review process, which occurs every 5 to 10 years, every city is required to review its last 5 year growth pattern and determine if it has enough land to support twenty years of growth at the present rate. If it does not have enough land to support twenty years of growth, the city

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must either expand the urban growth boundary or institute other policy measure that will allow the twenty year growth projections to be accommodated.

The result of this policy is that the urban areas will continue to grow and urban growth boundaries will expand to allow for the growth. In effect, there are no overall constraints on future growth in terms of numbers but growth will be concentrated in and around the existing cities. Growth constraints are more likely to exist in the form of infrastructure limitations (water and sewer system capacity) in smaller cities. This is especially true for the smaller cities.

A few of the model zones in the MPOs do not have areas of vacant land adjacent to them. These interior zones, such as model zone 108, are a special case and require additional attention. In the long run these zones do not have unlimited capacity. In these cases, we will get estimates of the capacity of the zone from the MPO and insert them into the model as a constraint to the amount of development that is possible in these model zones.

The third reason for the decision is that data on the type and amount of land available for development is not readily available, up to date or in easily comparable forms. Each of the 240 cities and 36 counties are required to maintain an individual record of the amount of vacant buildable land within their planning boundaries. The MPOs also have some records in this area. However, for most jurisdictions, these records are only needed during the Periodic Review process which occurs every 5 to 10 years on a rotating schedule. Given the limited resources available at the local level, the inventories are generally not maintained during the years between reviews. The vacant land data does not exist at a state-wide level. Accordingly, the collection of this data is a major task and beyond the scope of this project.

### **TRANUS Model Data**

***Complete Data Coverage Items*** — The following data items are available for all of the 122 internal model zones. There are three primary sources for this data. The first source is the 1990 Census and related products such as the State-wide Census Transportation Planning Package. These files contain substantially more information than can be used directly by TRANUS. This information is generally available at the census tract and model zone levels. It is formatted for use by ArcView and provides some additional insight into the population characteristics of the individual model zone. A number of the household level data items are updated to 1996 and projected to 2001 by Claritas. A complete listing of this data is included in an appendix to this memo.

Residential building information and official city and county population information is available by jurisdiction (city and county) by year from the Center for Population Research and Census at Portland State University. The Department of Employment has provided information on the number of jobs from ES 202 file for 1990 and 1995. More detailed information on the data to be used by the model is presented below.

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***Number of Households by Income Group*** — Three of the economic sectors that will be used in the model are household sectors by income. They sectors are classified by income into low, medium and high income groups to reflect the differing expenditure and travel patterns of these income groups. The 1990 household income data from the 1990 Census is classified as follows:

Low - Household income less than \$20,000 in 1989

Medium - Household income between \$20,000 and \$50,000 in 1989

High - Household income more than \$50,000 in 1989

Data was not available for 1995 from Claritas but was available for 1996. The 1996 household classification interval were developed by inflating 1990 dollars to 1996 dollars in order to account for the impacts of inflation in Oregon between 1990 and 1996. The 1996 household income data is classified as follows:

Low - Household income less than \$23,441 in 1996

Medium - household income between \$23,442 and \$58,604 in 1996

High - Household income greater that \$58,604 in 1996

The Claritas household income for the current year (1996) is not divided into categories on the income boundaries used in the model. Therefore it was necessary to proportionally divide two income categories (HINCCY\_11 and HINCCY\_20) for 1996 in order to maintain a comparable division of households based on comparable income levels for 1990 and 1996.

Total Population by census tract data is not used directly the model. The population of any model zone can easily be estimated by means of post model run processing. Claritas and the Center for Population Research and Census at Portland State University provide total populations numbers that can be used as a check to insure the calibration phase of the model process reflects existing conditions in Oregon.

***Number of Housing Units by Type*** — Housing units are a non transportable model sector. The 1990 Census provides the model with base year data on the number of housing units by model zone. In addition, the Census provides the number of housing units by type - single family dwelling units (SFD) and multiple family units (MFD). The number of mobile homes is also provided for 1990. Mobile homes are generally considered to be SFD and will be grouped with this model sector. Claritas provides a estimate of the total number of housing units for 1996 by census tract and model zone, but does not provide a breakdown of the type of housing units. The Center for Population Research and Census at Portland State has a record of the number housing units built by the SFD and MFD categories for each county and city. These two data sets will be combined to estimate the number of housing units by type for each model zone. The estimation methodology will be based on proportionally allocating the estimated growth in the number of housing units, keeping in mind the amount of each type of housing that existed in the base year.

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The number of permanently occupied housing units in a model zone provides us with a clue as to special circumstances that may be operating in the housing market of an individual model zone. If you compare the number of households in a zone with the number of housing units in a zone you will find two basic conditions. In one case, the number of households is less than the number of housing units by a relatively small percentage -- usually between 1% and 10%. This is a sign of a relatively normal housing market where the vacancy rate is dependent on the health of the local economy and the related migration trends. In the second case, the number of housing units exceeds the number of household by 20% to 50%. In many of these areas there is a strong vacation home / second home market. It is probable that these areas are an attractive destination for many recreation trips. It is also possible for this type of situation to exist in a small housing market that has undergone a major economic dislocation such as the closure of a major employer (i.e., sawmill etc.). It may be beneficial to class this second type of housing market in a different sector.

***Covered Employment (ES 202)*** — The Department of Employment has provided a summary version of the covered employment records for 1990 and 1995. In Oregon, covered employment accounted for an average of 84.7 percent of all employment in the state in the time period 1980 to 1995. In 1995, covered employment was nearly 90% of total statewide employment. The more than 147,000 employment site records in this database provide a good description of the economic structure of Oregon. Each record provides the average number of employees in 1990 and 1995 for each site and the total payroll for each of these years. The sites are also described by a four digit SIC code and the ZIP code location of the site. An allocation table was constructed that linked the economic sectors in the model with specific four digit SIC codes. Some of the records were missing the SIC codes and we have filled in missing codes for firms with more than 20 employees when it was possible to easily identify which industry the firm was part of.

Each firm with multiple work sites is required to fill out a form that lists the employees at each work site. While it was possible to identify a number of businesses that did not do this, the governmental employment sector as a whole did the worst job of complying with this requirement. Any allocation of governmental employment to internal and external model zones based on the data in this file should be viewed with some skepticism. An average wage was estimated for each site by dividing the number of employees by the total payroll for 1990 and 1995. Employees were classified into low, medium and high wage jobs using the same income classification previously presented in the discussion on household income. It is recognized that this measure will tend to understate the number of high wage and low wage jobs in a particular economic model sector and model zone. The individual work sites were located by ZIP code. Employment was allocated to individual model zones based on a table that provided a link between the ZIP Code and the model zones.

***Census Transportation Planning Package*** — CTPP was used at the statewide level. The CTPP information was extracted at the minor civil division / place level for all variables

used. An equivalence table was construction to allocate the CTPP data to the model zone. Additional information on the CTPP data is provided in another memorandum.

**HUD Market Rent Data** — Average market rent for housing by size (number of bedrooms) of units is available at the county or MSA level for all of Oregon in 1990 and 1995. This data set provides a second source for housing rental cost if no other sources are available.

**FW Dodge Data Base on Building Area 1995** — This data base contains a county level summary of the building floor area by county for 1995. The data is divided into single family and multi-family residential categories. There are several categories of commercial and industrial buildings. This data set contains statewide summaries of annual construction by floor area and building value, divided into many building categories, but does not contain annual county level summaries of comparable information. The 1995 information was used to estimate the number of square feet of building per employee.

**Less than Complete Data Coverages** — One data variable that is used by TRANUS is not available for all 122 internal model zones. Land and building price information in the form of sales data for 1990 and 1995 is only available for the most populated area of Oregon. There are other data sources that can be used to estimate this information for the model zones where there is no sales data.

**Land Sales and Building Sales Data for 1989-90 and 1994-95** — This information was recently purchased from DataQuick. The number of sales records is shown in the following table:

County	Number of records	
	1989-90	1994-95
Multnomah	15,832	29,440
Clackamas	9,259	16,949
Washington	10,215	22,091
Clark, WA	8,210	17,474
Yamhill	2,945	6,313
Marion	7,203	12,393
Polk	3,094	4,621
Linn	0	1,756
Benton	22	4,982
Lane	8,136	11,850
Jackson	0	2,935
Total	61,971	130,804

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The most numerous records mark the sales of single family homes. Accordingly, the best data will be for this part of the land market. The data contains a site Zip Code that will be used to allocate individual records to the model zones prior to undertaking analysis at the zone level. The records also contain a number of variables, in addition to the sale price, that may be valuable in building generalized models, should this prove to be necessary. These variables include building square feet, number of stories, lot size, land value, assessed value, year built, and amount of mortgage. Following a more complete analysis of these records, it may be necessary to aggregate several model zones in order to have enough records of multifamily residential, commercial and industrial land and building sales to develop models that estimate the prices for individual model zones. Three of the smaller counties have few, if any, records for 1989 - 1990 and will present a particular challenge in constructing a price model for the base year.

County assessor data is available for 30 of the 36 counties in Oregon, including all of the counties for which there is sales data. An analysis will be made of the differences between the assessed value and the sales value to determine the nature and variation in the relationship between sales price and assessed value. This information will be used to help develop estimates of prices for those areas of the state where the only available data is the information contained in the County Assessor records.

***County Assessor Data FY 94-95*** — Copies of the county assessor rolls were obtained from the Oregon Department of Revenue. DOR has records from most of the counties in the state for FY 93-94, FY 94-95 and FY 95-96. The largest set of assessor rolls are the records from 30 of the 36 counties for FY 94-95. These records will be used in this analysis.

Assessed value in Oregon is required to be 100% of the real market value of the land and improvements on a site. As with the land sales data, the most numerous records and the best estimate of value will be for the value of single family dwellings. Each assessor record is required to contain a three digit property class code. The first digit categorizes all parcels into generalized land use categories such as single family residential, commercial, industrial, multi-family residential, and farm land. The other two digits give additional information about the parcel. There is some variation in application of these code by the different county assessors. Despite these differences, the first digit classification is consistent. An initial review of several assessor data sets produced single family record counts of several hundred to several thousand records per model zone. Commercial, industrial and multi-family records sets are substantially smaller in every model zone.

The allocation of individual assessor records to a particular model zone was accomplished by use of the tax district code contained in each of the assessor records. Every county is divided into a set of polygons based on the unique combinations of overlapping taxing districts. These tax codes tend to cluster around cities and other developed areas and approximate the model zone boundaries fairly well.

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In addition, to the tax account records contained in the assessor roll, a property tax summary has been collected from most of the counties for FY 89-90 and FY 94-95. These summaries provide the only easily accessible record of the average annual growth rate in assessed value at the county level. The tax summary lists the total assessed value for the county and each of the cities in the county. Using this information, the average annual growth rate can be estimated for each of the cities and counties. This growth rate will be used to “deflate” FY 94-95 average assessed by property class to FY 89-90 values. This will provide an estimate of the value of land and buildings that most closely match the base year values needed by TRANUS.

***Additional Data*** — The data sets collected for this project include a larger number of 1990 US Census data items. For a complete listing of these data fields see the attached appendix. These fields were collected with the other information previously mentioned in this memorandum. They can add a more qualitative information to the model to enrich our understandings of the context within which the model operates. In addition, some of the variables can be used to help create missing information that is needed for the base year calibration of the model. This data available at the model zone level and the census tract level for display by ArcView.

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## **Appendix**

### **Land Use Data Dictionary**

#### **1. Census Data — 1990**

The data items listed below are available at the Census Tract and Model Zone Levels. This information has been extracted from the STF3A and STF3B US Census Data Tabulations for 1990. The data covers the state of Oregon and Clark County Washington. Each records contains the Census Tract FIPS Number and the Model Zone Number. Additional data fields are available if they are needed.

FIPS Numbers are linked to the Census Tracts as depicted in the Newmodel4 ArcView Shape File.

All number are for the population at Place of Residence. Urban Areas are as defined by the US Census - places with a population of more than 2,500 people.

- Population
- Number of Families
- Number of Households
- Number of Households with Income < \$20K
- Number of Households with Income > \$20K and < \$50K
- Number of Households with Income > \$50K
- Number of Persons - Male
- Number of Persons - Female
- Number of 1 Person Households
- Number of 2 Person Households
- Number of 3 Person Households
- Number of 4 Person Households
- Number of 5 Person Households
- Number of 6 Person Households
- Number of 7+ Person Households
- Journey to Work Mode - Drove Alone
- Journey to Work Mode - Carpool
- Journey to Work Mode - Bus
- Journey to Work Mode - Street Car / LRT
- Journey to Work Mode - Subway
- Journey to Work Mode - Railroad
- Journey to Work Mode - Ferry
- Journey to Work Mode - Taxi
- Journey to Work Mode - Motorcycle
- Journey to Work Mode - Bicycle
- Journey to Work Mode - Walk
- Journey to Work Mode - Other Means
- Journey to Work Mode - Work at Home
- Travel Time to Work - < 5min.

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Travel Time to Work - 5 -9 min.  
Travel Time to Work - 10 - 14 min.  
Travel Time to Work - 15 - 19 min.  
Travel Time to Work - 20 - 24 min.  
Travel Time to Work - 25 - 29 min.  
Travel Time to Work - 30 -34 min.  
Travel Time to Work - 35 39 min.  
Travel Time to Work - 40 - 44 min.  
Travel Time to Work - 45 - 59 min.  
Travel Time to Work - 60 - 89 min.  
Travel Time to Work - 90 + min.  
Travel Time to Work - Work at Home  
Education Level Age 25+ - < 9th grade  
Education Level Age 25+ - 9 - 12 grade  
Education Level Age 25+ - HS Graduate  
Education Level Age 25+ - College non graduate  
Education Level Age 25+ - Associates Degree  
Education Level Age 25+ - Bachelor's Degree  
Education Level Age 25+ - Graduate Degree  
Industry Employed in - Agriculture, Forestry, Fishery  
Industry Employed in - Mining  
Industry Employed in - Construction  
Industry Employed in - Manufacturing Non Durable  
Industry Employed in - Manufacturing Durable  
Industry Employed in - Transportation  
Industry Employed in - Communication / Utilities  
Industry Employed in - Wholesale Trade  
Industry Employed in - Retail Trade  
Industry Employed in - F.I.R.E.  
Industry Employed in - Business Repair and Service  
Industry Employed in - Personal Services  
Industry Employed in - Entertainment / Recreation  
Industry Employed in - Health Services  
Industry Employed in - Education Services  
Industry Employed in - Other Professions  
Industry Employed in -Public Administration / Government  
Occupation Employed in - Executive / Management  
Occupation Employed in - Professional Specialty  
Occupation Employed in - Technical  
Occupation Employed in - Sales  
Occupation Employed in - Administrative Support  
Occupation Employed in - Private Household  
Occupation Employed in - Protective Services  
Occupation Employed in - General Service  
Occupation Employed in - Farming, Forestry, Fishing  
Occupation Employed in - Precision Production / Repair  
Occupation Employed in - Machinery  
Occupation Employed in - Transportation

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Occupation Employed in - Misc. Labor

Number of Household with Income - < \$5000

Number of Household with Income - \$5000 - \$9999

Number of Household with Income - \$10000 - 12499

Number of Household with Income - \$12500 - 14999

Number of Household with Income - \$15000 - 17499

Number of Household with Income - \$17500 - 19999

Number of Household with Income - \$20000 - 22499

Number of Household with Income - \$22500 - 24999

Number of Household with Income - \$25000 - 27499

Number of Household with Income - \$27500 - 29999

Number of Household with Income - \$30000 - 32499

Number of Household with Income - \$32500 - 34999

Number of Household with Income - \$35000 - 37499

Number of Household with Income - \$37500 - 39999

Number of Household with Income - \$40000 - 42499

Number of Household with Income - \$42500 - 44999

Number of Household with Income - \$45000 - 47499

Number of Household with Income - \$47500 - 49999

Number of Household with Income - \$50000 - 54999

Number of Household with Income - \$55000 - 59999

Number of Household with Income - \$60000 - 74999

Number of Household with Income - \$75000 - 99999

Number of Household with Income - \$100000 - 124999

Number of Household with Income - \$125000 - 149999

Number of Household with Income - \$150000+

Median Household Income

Number of Household with Earnings Income

Number of Household without Earnings Income

Number of Household with Wages or Salary Income

Number of Household with No Wages or Salary Income

Number of Household with Non Farm Salary or Earnings Income

Number of Household with No Non Farm Salary or Earnings Income

Number of Household with Farm Salary or Earnings Income

Number of Household with No Farm Salary or Earnings Income

Number of Household with Interest, Dividend or Rent Income

Number of Household with No Interest Dividend or Rent Income

Number of Household with Social Security Income

Number of Household with No Social Security Income

Number of Household with Public Assistance Income

Number of Household with No Public Assistance Income

Number of Household with Retirement Income

Number of Household with No Retirement Income

Number of Household with Other Income

Number of Household with No Other Income

Number of Persons in Household with Public Assistance Income, Age < 15

Number of Persons in Household with Public Assistance Income, Age 15 - 64

Number of Persons in Household with Public Assistance Income, Age 65+

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Number of Families with No Workers  
Number of Families with 1 Worker  
Number of Families with 2 Workers  
Number of Families with 3+ Workers  
Per Capita Income  
Number of Persons Below Poverty Level, Age < 5  
Number of Persons Below Poverty Level, Age 5  
Number of Persons Below Poverty Level, Age 6 - 11  
Number of Persons Below Poverty Level, Age 12 -17  
Number of Persons Below Poverty Level, Age 18 -24  
Number of Persons Below Poverty Level, Age 25 - 34  
Number of Persons Below Poverty Level, Age 35 - 44  
Number of Persons Below Poverty Level, Age 45 - 54  
Number of Persons Below Poverty Level, Age 55 - 59  
Number of Persons Below Poverty Level, Age 60 - 64  
Number of Persons Below Poverty Level, Age 65 - 74  
Number of Persons Below Poverty Level, Age 75+  
Number of Housing Units (HU)  
100% Count of Housing Units  
Number of Housing Units Occupied  
Number of Housing Units Vacant  
Number of Housing Units Inside Urban Area  
Number of Housing Units Outside Urban Area  
Number of Housing Units Rural Farm  
Number of Housing Units Rural Non Farm  
Number of Housing Units Owner Occupied  
Number of Housing Units Renter Occupied  
Number of Housing Units Renter Occupied by Type, SFD Detached  
Number of Housing Units Renter Occupied by Type, SFD Attached  
Number of Housing Units Renter Occupied by Type, Duplex (2)  
Number of Housing Units Renter Occupied by Type, Triplex (3), Four-Plex (4)  
Number of Housing Units Renter Occupied by Type, Apartment 5 -9 units  
Number of Housing Units Renter Occupied by Type, Apartment 10 - 19 units  
Number of Housing Units Renter Occupied by Type, Apartment 20 - 49 units  
Number of Housing Units Renter Occupied by Type, Apartment 50 + units  
Number of Housing Units Renter Occupied by Type, Mobile Home  
Number of Housing Units Renter Occupied by Type, Other  
Number of Housing Units Built by Year, 1989 - March 1990  
Number of Housing Units Built by Year, 1985 -1988  
Number of Housing Units Built by Year, 1980 - 1984  
Number of Housing Units Built by Year, 1970 -1979  
Number of Housing Units Built by Year, 1960 -1969  
Number of Housing Units Built by Year, 1950 - 1959  
Number of Housing Units Built by Year, 1940 - 1949  
Number of Housing Units Built by Year, Pre 1939  
Median Year Built - All Housing Units  
Housing Unit Rental Occupied - Median Gross Rent  
Housing Unit Rental Occupied - Aggregate Gross Rent

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Housing Unit Rental Occupied - Rent Not Including Utilities  
 Number of Housing Unit Rental Occupied - Utilities Not Included in Rent  
 Number of Housing Unit Rental Occupied - Utilities Included in Rent  
 Median Rent as a Percentage of Household Income  
 Median Selected Monthly Owner Cost for Households with Mortgage  
 Median Selected Monthly Owner Cost for Households without Mortgage  
 Median Selected Monthly Cost with Mortgage as a Percentage of Income  
 Median Selected Monthly Cost without Mortgage as a Percentage of Income  
 Median Value for Owner Occupied Housing Units

**2. Employment for Oregon for 1990 and 1995 by TRANUS sector and zone  
 (Covered employment for Oregon 1990 and 1995)**

The original data used to generate this data set is a portion of the Department of Employment ES 202 File for the State of Oregon. Covered employment is defined as employment that is covered for unemployment compensation. Covered employment represents more than 90% of the Oregon labor force. A more detailed discussion of covered employment is attached to this Data Dictionary as an appendix. Each employer that has covered employment in the State of Oregon is required to report the number of employees and the total payroll for each business site. The reporting firms are required to classify their business by a four digit SIC code. There are some firms that do not do this.

The file supplied by the Department of Employment contained the following data fields.

FIRM	Firm Number
RUN	Run Number
CTY90	County Number for Site
SIC90	1990 Four digit SIC Code for Site
ZIP90	1990 Zip Code of Site
AVG90	Average Number of Employees at Site During Year
PAY90	Total Annual Payroll of Site
CTY95	County Number for Site
SIC95	1995 Four digit SIC Code for Site
ZIP95	1995 Zip Code for Site
AVG95	Average Number of Employees at Site During Year
PAY95	Total Annual Payroll for Site
NAME	Name of Company
STREET	Street for Mailing Address
CITY	City for Mailing Address
STATE	State for Mailing Address
ZIP	Zip for Code Mailing Address

The following data fields were calculated or added to this data base prior to running queries to produce the data for the model. A Zip Code to Zone Number Table was constructed and the fields zone number and Tranus name were updated by query. A second update query was run to include the Model Numbers.

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Wage90	Average Wage by Site for 1990 (PAY90 / AVG 90)
Wage95	Average Wage by Site for 1995 (PAY95 / AVG 95)
Zone Number	Original Zone Number - Update Query from ZIP95
TRANUS Name	Zone Name
Model Number	New 3 digit zone number
Tranus Sector	Tranus Economic Sectors based on SIC codes.

A final set of queries produced three tables with the number of employees by Tranus Sector by Model Zone by Income Category - Low, Medium and High. This is the only data derived from the ES 202 file that is used directly by the Model. The model data is not directly attributable to any identifiable firm.

Tranus Sector Name
Model Zone
Number of Employees by Average Income Category

### 3. Land and building sales data 1989-90 and 1994-95 (From DataQuick)

Metro has FY 95-96 sales data that has been through the Address Matching Process. Sonny Condor says that the single family residential data is the best in this series. Each of the other data sets have its own particular problems.

The following is the data fields in this each of these data sets.

Site Number	Street Number
Site Dir	Street Direction
Site Name	Street Name
Site city	Site city and state
Site zip	Site Zip code +4
Site route	Site Postal Carrier Route
Owner	Owner Name
Owner1	Owner First Name
Owner2	Owner Middle Initial
Owner3	Owner Last Name
Owner4	Owner Spouses Name
Owner5	Second Owners Name
Owner6	Second Owners First Name
Owner7	Second Owners Middle Initial
Owner8	Second Owners Last Name
Owner9	Second Owners Spouses name
Mail Address	Mailing Address
Mail city	Mailing City and State
Mail zip	Mailing Zip code +4
Site Unit	Site Unit
Phone	Owners Phone Number
Use	Land Use Description
Zoning	Zoning
SQFT	Building square feet

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Room	Room Count
Bed	Number of Bedrooms
Bath	Number of Bathrooms
Flag	Flag 1
Story	Number of stories
Units	Number of Units
Sale Price	Last Transfer Price
FP	Full or partial transfer
Sales Date	Last transfer date
Document	Document Number
MP	Multiple or Partial
Land	Land value
Percent	Improvement Percentage
AV	Assessed Value
Lot Size Ac	Lot size in acres
Lot size Sq Ft	Lot size in square feet
Parcel	Parcel Number
Year	Year Built
Lender	Lender name
First Loan	First Loan amount
Additional Loan	Additional loan amount
Loan Rate	Loan Rate Type
Loan Type	FHA / VA Loan
Perv Sale	Previous Sale Date.

#### 4. County Assessor Data for FY 1994-95

The following variable have been calculated from the FY 1994-95 county tax assessor records obtained from the Department of Revenue. This data was grouped by taxing district codes. Each taxing district code represents a unique set of taxing jurisdictions. Taxing district codes tend to cluster around individual cities. The basis for the tax code district number system is the school district.

Assessor Records also contain a three digit Real Property Class Code. These code divide records into general land use classes such as single family residential, multifamily residential, commercial and industrial land use. This code is not “zoning” in the traditional sense.

The following list of data fields is not complete but does contain the most important fields in the assessor records.

County	County Number
Acct	Account Number
Land Only	Land Only Record Flag
Rmv Imp	Real Market Value Improvements
Rmv Land	Real Market Value Land
Map	Tax Lot Map Number
Code Area	Tax District Code Area Number
Acres	Land Area In Acres

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Av Land	Assessed Value for Land
Av Imp	Assessed Value of Improvements
P Class	Property Class Code
Av Mh	Assessed Value of Mobile Home
Av Pers Prop	Assessed Value Personal Property
Rmv Pers Prop	Real Market Value of Personal Property
Rmv Mh	Real Market Value of Mobile Home

The following data fields are the result of the analysis and are contained in a model data set.

SFD_Vland	Average AV of a SFD vacant parcel
SFD	Average AV for a SFD structure on an individual lot.
MFD_Vland	Average AV of a MFD vacant parcel
MFD_ImpPar	Average AV for MFD structure on an individual lot.
MFD_Units	Average AV per Unit for MFD
Com_Vland	Average AV per Com. vacant parcel.
Com_ImpPar	Average AV for Com. Structure on an individual lot.
Com_SQFT	Average AV per Square Foot of Com. Structure.
Ind_Vland	Average AV per Ind. Vacant parcel
Ind_ImpPar	Average AV for Ind Structure on an individual lot.
Ind_SQFT	Average AV per Square Foot of Ind. Structure.

Number of Square feet of structure of in the commercial (Com) and industrial (Ind) are derived from FW Dodge table for 1995 which was assembled at County level.

## 5. Household Income for 1980, 1990, 1996, 2001

The data for the following variable has been purchased from Claritas. This data is available for 1980, 1990, current year (1996) and a 5 year projection (2001) for all of the listed data fields. The Claritas definitions are attached to this Data Dictionary. The information is available at the Census Tract level and each record contains a series of FIPS code the are related to the appropriate level of census geography. A look up table was developed to link this file to the Model zone system.

A complete listing of the original data fields are attached to this data dictionary. The following data dictionary is a list of the data field contained in the ASCII file Hhsum.txt.

Model_Num	Tranus Model Zone Number
POP80	Total Population 1980 - Census
POP90	Total Population 1990 - Census
POP96	Total Estimated Population - 1996
POP01	Total Estimated Population - 2001
HHS80	Total Households 1980 - Census
HHS90	Total Households 1990 - Census
HHS96	Total Estimated Households - 1996
HHS01	Total Estimated Households - 2001
HUS80	Total Housing Units 1980 - Census

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HUS90	Total Housing Units 1990 - Census
HUS96	Total Estimated Housing Units - 1996
HUS01	Total Estimated Housing Units - 2001
HHI80Low	Number of Households with Income < 20K 1979 - Census
HHI80Med	Number of Households with Income 20 to 50 1979 - Census
HHI80High	Number of Households with Income > 50K 1979 - Census
HHI90Low	Number of Households with Income Low 1989 - Census
HHI90Med	Number of Households with Income Medium 1989 - Census
HHI90High	Number of Households with Income High 1989 - Census
HHI96Low	Estimated Number of Hshlds. with Income Low - 1996
HHI96Med	Estimated Number of Hshlds. with Income Medium - 1996
HHI96High	Estimated Number of Hshlds. with Income High - 1996
HHI01Low	Estimated Number of Hshlds. with Income < 20K - 2001
HHI01Med	Estimated Number of Hshlds. with Income 20 to 50 - 2001
HHI01High	Estimated Number of Hshlds. with Income > 50K - 2001
CHU8090	Change in Number of Housing Units 1980 - 1990 - Census
CHU9096	Est. Change in Number of Housing Units 1990 - 1996
CHU9601	Est. Change in Number of Housing Units 1996 - 2001
CPOP8090	Change in Population 1980 - 1990 - Census
CPOP9096	Estimated Change in Population 1990 - 1996
CPOP9601	Estimated Change in Population 1996 - 2001
NOCC80	Est. Number of 1980 HU Not Permanently Occupied
NOCC90	Est. Number of 1990 HU Not Permanently Occupied
NOCC96	Est. Number of 1996 HU Not Permanently Occupied
NOCC01	Est. Number of 2001 HU Not Permanently Occupied
VAC80	Est. Percentage of 1980 HU Not Permanently Occupied
VAC90	Est. Percentage of 1990 HU Not Permanently Occupied
VAC96	Est. Percentage of 1996 HU Not Permanently Occupied
VAC01	Est. Percentage of 2001 HU Not Permanently Occupied
C9096HHIL	Est. Change 90-96 Number of Households Low Income
C9096HHIM	Est. Change 90-96 Number of Households Med. Income
C9096HHIH	Est. Change 90-96 Number of Households High Income