

1998 VACANT LAND INVENTORY

&

POPULATION AND EMPLOYMENT UPDATE

**FOR
CORNELIUS, OREGON**

DECEMBER 8, 1998

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INTRODUCTION

The following report is the foundation of the periodic review process for the City of Cornelius. The report consists of several sections including vacant land inventory, dwelling unit capacity, employment capacity, population forecasts, and the relationship of all these elements with one another. The report also looks at past development trends and compares these trends to the future development possibilities within the community.

Included in this paper is a summary of the methodology used to determine vacant, developable land within the City as well as land outside the City boundary, but within the Urban Growth Boundary and the methods used to determine the capacity of the buildable vacant land. Once the capacity is determined, the capacity is compared to the dwelling units and employment allotments established by Metro. This comparison helps the City to understand changes it must undertake to come into compliance with Metro and the State, as well as the measures that must be undertaken to accommodate future, long-term development. Finally, this report looks at population projections and the impact of a limited supply of developable land to accommodate the long-term projected population.

1998 Update of the Land Use Inventory

The City of Cornelius conducted a vacant land inventory in 1994 and again in 1996 to gain an understanding of the amount of land available for development within each zoning classification. This analysis has been updated once again in 1998 with some corrections to the previous inventories, which will be discussed later. This inventory is important for several reasons. First, cities around the Metro region are limited by the amount of boundary expansion that can take place. Because of this, they must have an understanding of past development trends and the existing capacity in order to determine the future needs and possibilities.

Second, the inventory is important because the City of Cornelius is required to accommodate an allotment set out by Metro and Washington County. The following analysis will look at the 1998 vacant land inventory and compare this inventory to the previous inventories done. The analysis will then compare past patterns of development to the allotment provided by Metro to determine if the existing capacity can accommodate the allotment. If the existing zoning capacity cannot accommodate the allotment, changes must be adopted to accommodate the necessary development. The result of this analysis will be used to guide future changes to the Comprehensive Plan and the Planning Code.

Vacant Land Inventory (Within the City Limits)

The following 1998 vacant land inventory (Table 1) includes those vacant lands located within the 1994 city boundary. This boundary standard is established by Metro, and the 2017 allotment is based on this boundary.

Table 1 summarizes the total amount of vacant land available for development within the Cornelius City boundary in 1998. It also provides a breakdown of vacant land by transportation analysis zones (TAZ's) and zoning district.

<u>TAZ</u>	<u>R-7</u>	<u>A-2</u>	<u>Commercial</u>	<u>Industrial</u>	<u>Total</u>
280	4.69	21.09	31.13	58.49	115.4
285	18.96	12.29	10.98	6.1	48.33
286	15.58	11.61	52.7	0	79.89
Total	39.23	44.99	94.81	64.59	243.62

Corrections to Vacant Land Inventory

The City of Cornelius is surrounded by approximately 47 acres of vacant developable land, which lies outside the city limits, but within the growth boundary. These lands are located to the northeast and the southeast of the City boundary. While these properties are expected to be annexed into the City, they are not considered part of the vacant land that can be counted toward fulfilling the dwelling unit and employment allotments established by the Metro Functional Plan.

According to Metro, the lands located outside the City boundary, but within the growth area, shall not be counted toward fulfilling the dwelling unit and employment allotment, although these lands are important in the overall future development of Cornelius.

Following the discussion regarding capacity within the city limits; these lands outside the City boundary will be accounted for to determine future capacity. But first, the 1994 inventory discrepancies will be addressed.

The first discrepancy in the 1994 inventory is that the lands located outside the City boundary, but within the Urban Growth Boundary, were included in the calculation of available lands to meet the Metro allotment. This inclusion affects the industrial zone as well as the R-7 zone.

In the original 1994 inventory an additional 36.28 acres of industrial land was included in the inventory, this land is actually located outside the 1994 City boundary. This land has been removed from the 1994 inventory and this correction is reflected in Table 2. In addition, the 1994 inventory of R-7 zoned land included an additional 8.7 acres located outside the City boundary. This correction is also reflected in Table 2. Table 2 reflects the actual changes in vacant land inventory between 1994 and 1998 within the City boundary.

<u>Year</u>	<u>R-7</u>	<u>A-2</u>	<u>Commercial</u>	<u>Industrial</u>	<u>Total</u>
1994 Vacant Land	131.42	49.54	110.3	88.41	379.67
1998 Vacant Land	39.23	44.99	94.81	64.59	243.62
Change	-92.19	-4.55	-15.49	-23.82	-136.05

Change in Vacant Lands 1994-1998

Table 2 illustrates that, while all the zoning classifications experienced some level of development, the majority of the development occurred in the R-7 zoning classification. The least amount of development occurred in the A-2 zoning classification.

Determining Capacity

The determination of capacity begins first with reductions for floodplain, schools, parks, and churches. The reduction then accounts for streets and right-of-way. Once these reductions are accounted for, different methods are used to determine the capacity within different zoning districts. The methods for determining reductions, as well as dwelling unit and employment capacities for each zoning district, are illustrated in the following sections.

Floodplain

According to FEMA, the floodplain elevation is 151.6 feet above sea level. The City code calls for no development below 155' feet, but this restriction has been difficult to enforce in the past. While floodplain has been a factor for development along the southern border and the northern border of the City, most of the areas adjacent to the floodplain are built out. Because of this, vacant land constrained by the floodplain within the city limits is not an issue with respect to the allotment.

Those lands outside the City boundary but within the UGB do border floodplain, but the Urban Growth Boundary is drawn to follow the edge of the floodplain. Because of this, the floodplain will not be a factor when looking at those lands outside the City boundary, but within the UGB. Therefore, based on the total land available for development in this report no reduction is taken for constrained lands, i.e. floodplain.

Schools, Parks and Churches

The first reduction of vacant land is to reduce a portion for schools, parks and churches. Normally, this amount is converted into a ratio whereby the estimated jurisdictional land need for schools, parks and churches is divided by the total gross vacant buildable land for the jurisdiction. This ratio is then removed from each gross vacant buildable tax lot. According to Metro, the total estimated land need for schools, parks and churches in Cornelius is 18.04 acres. This figure is calculated by taking the regional need for schools, parks and churches in the Urban Growth Report and multiplying it by the portion of the jurisdiction's dwelling unit target capacity to the total regional dwelling unit target capacity for 1994-2017.

In Cornelius, there are two vacant sites within the City that have been identified for school sites one of which, Emmaus Christian School, is under construction. The acreage of these two sites happens to be 17.64 acres, nearly the same as the estimated land need for schools, parks and churches provided by Metro. Based on this, these two sites will be removed from the future calculations and the ratio for schools, parks and churches will not be used.

Table 3 reflects the 1998 available vacant land after removing the schools, parks and churches property.

The land removed for schools, parks, and churches happens to be entirely from the R-7 zoning district. One parcel of 6.38 acres is presently in use as Emmaus Christian School. This parcel was removed from the vacant land inventory in Table Two. The second parcel identified as school property remains vacant in 1998. The reduction for this parcel is reflected in Table Three.

Table 3
1998 Vacant Land Inventory

(Reflects removal of land for schools, parks and churches)

(Includes land only within the 1994 City boundary)

<u>TAZ</u>	<u>R-7</u>	<u>A-2</u>	<u>Commercial</u>	<u>Industrial</u>	<u>Total</u>
280	4.69	21.09	31.13	58.49	115.4
285	18.96	12.29	10.98	6.1	48.33
286	4.32	11.61	52.7	0	68.63
Total	27.97	44.99	94.81	64.59	232.36

Streets and Right-of-Way

The next step in determining dwelling unit capacity is to take reductions for streets and right-of-way. The method used in this analysis follows the same assumptions used by Metro and required in the Functional Plan. This method is as follows.

Areas less than or equal to 3/8 of one acre (16,335 square feet) are assumed to be platted; they are given zero reduction for streets and right-of-way, and if situated in a single family zone, receive one dwelling unit regardless of existing zoning. Areas greater than 3/8 of one acre and less than one acre receive a 10% reduction for streets and right-of-way, and areas one acre or larger receive a 22% reduction for streets and right-of-way.

Following the above methodology provides the net residential densities. In keeping with the functional plan requirements outlined in Title 1, an underbuild factor of 20 percent of maximum-zoned residential density is applied to the net residential densities. The application and result of applying this method to the residentially zoned lands can be seen in Tables 4 through 6.

R-7 Capacity

According to the 1998 vacant lands inventory there is currently 39.23 gross acres of R-7 zoned land available for development within the city limits. Applying the methodology illustrated in Table 4 reduces the R-7 zoned land available to 15.57 acres. Dividing 15.57 acres by the minimum lot size allowed in the R-7 zoning district gives a capacity of 97 dwelling units. Adding 15 dwelling units to account for those sites identified on 3/8 acres or less provides a total existing capacity of 112 dwelling units in the R-7 zoning district.

Table 4
Estimation of Dwelling Unit Capacity in R-7 Zoning

Gross Vacant Acres (1998)	39.23
Number of Parcels Omitted from Calculations	15
Acreage Omitted from Calculations	3.51
Reduction for Schools, Parks and Churches	11.26
Reduction for Streets and Right-of-Way	5
Net Vacant Land	19.46
Underbuild Factor of 20 Percent of Maximum Density	0.8
Final Net Vacant Land	15.568
Dwelling Unit Capacity of Final Net Vacant Land	97
Number of Dwelling Units Omitted from Calculations	15
Total Dwelling Unit Capacity of Existing R-7 Vacant Land	112

A-2 Capacity

The A-2 zoning district has seen much less development than the R-7 zoning district since 1990. While there may be many reasons for this, there is presently more vacant land available in the A-2 zoning district than within the R-7 zoning district. To determine A-2 capacity two different methods have been followed.

Table 5 illustrates the first method, maximum density method. This method follows a similar approach as that used for the R-7 zoning district. Reductions are first taken for schools, parks, churches, streets and right-of-way. Then the minimum lot size is determined at 14 units per acre and an underbuild factor of 20% is applied to the net vacant land. Following this method provides a total dwelling unit capacity of 415 units.

Table 5
Estimation of Dwelling Unit Capacity in A-2 Zoning
Maximum Density Method

Gross Vacant Acres	45.3
Reduction for Schools, Parks and Churches	0
Reduction for Streets and Right-of-Way	8.28
Net Vacant Land	37.02
Underbuild Factor of 20 Percent of Maximum Density	0.8
Final Net Vacant Land	29.62
Total Dwelling Unit Capacity of Existing A-2 Vacant Land	415

The second method is based on an average density of 4000 square feet per lot. This option is provided because previous analysis by Metro followed this average density. The procedure can be seen in Table 7. Once again, the gross vacant land is reduced for schools, parks, churches, streets and right-of-way. In the case of the A-2 there is no reduction for schools, parks, and churches because all of the land identified as school property is zoned R-7. The resulting net vacant land after reductions is 37.02 acres. This figure is not multiplied by an underbuild factor because an average density is assumed. This method of analysis provided an A-2 capacity of 403 dwelling units.

Gross Vacant Acres	45.3
Reduction for Schools, Parks and Churches	0
Reduction for Streets and Right-of-Way	8.28
Net Vacant Land	37.02
Average Density of 4000 Square Feet	
Total Dwelling Unit Capacity of Existing A-2 Vacant Land	403

Total Dwelling Unit Capacity

Based on the previous dwelling unit analysis Cornelius presently has a dwelling unit capacity of 515 dwelling units. This is assuming the lower estimate for the A-2 zoning district. The 1994 dwelling unit allotment for Cornelius is 1,019. Between 1994 and 1996 a housing inventory done by the City of Cornelius identified 245 dwelling units constructed. Additional building permits issued between September 1996 and August 1998 show an additional 308 dwelling unit permits issued for development within the 1994 City boundary. (Additional building permits were issued for a mobile home park, Council Bluffs, which was annexed into the City after 1996, these permits are not included in the allotment calculations)

Based on the 1994 allotment and the building permits issued between 1994 and 1998 Cornelius must accommodate an additional 466 dwelling units. With an existing capacity of 515 units, Cornelius meets the basic allotment target of dwelling units established by Metro, exceeding it by 49 dwelling units.

The Main Street District is final area to factor in for dwelling unit capacity. The new Main Street Plan calls for mixed-use development in the Main Street District, which will encourage high-density residential dwelling units in an area that presently does not allow new dwelling units. The Main Street Plan also

addresses infill housing. The method used previously to determine dwelling unit capacity on vacant land identified the Main Street District as containing 4.67 net acres of residentially zoned land, yielding a dwelling unit capacity of 52 dwelling units.

The Metro 2017 Functional Plan allocations assigned a proportional share as a housing goal of 134 units for the Main Street District. According to the Main Street Plan however, the total number of potential dwelling units targeted for the Main Street District by the year 2017 is 269 dwelling units. This exceeds the previous estimate by 217 dwelling units. Factoring this figure into the total capacity to count toward meeting the Metro allotment, Cornelius exceeds the dwelling unit allotment by 266 dwelling units.

Commercial & Industrial Development

The information available for commercial and industrial development is very limited. The employment allotment established by Metro for Cornelius is 2812 between 1994 and 2017. Based on the allotment and basic assumptions established by Metro, the employment estimate for Cornelius is discussed in the following section.

The information in Table 8 summarizes the commercial and industrial development between 1996 and 1998. This information is taken from building permits issued during this timeframe and lists actual square footage per development. The estimated number of employees is based on a table created by Metro for various commercial and industrial uses.

According to Table 8 the total square footage built between 1996 and 1998 is 49,257 square feet, which results in an estimated 71 employees.

Table 8		
Commercial & Industrial Development 1996-1998		
<u>Commercial and Industrial Development</u>	<u>Square Footage</u>	<u>Estimated Number of Employees</u>
1. Villegas- Commercial Chevron C-Store	3850	10
2. Commercial Auto Care Center-	3664	9
3. Public Works Modular Unit	840	3
4. Virginia Garcia – Clinic	4376	13
5. Stewart Stiles- Warehouse/offices	4800	5
6. Heikes Produce- Addition to Process Building	1274	1
7. Chevron Car Wash	1938	5
8. FG School- Daycare/pre-school	6640	5
9. Lubrication Facility	1507	4
10. Truss Components	1728	2
11. Echo Shaw Addition	6600	5
12. Emmaus School	12040	9
Total Square Footage/Number of Employees	49,257	71

Table 9 provides a general summary of development between 1994 and 1996. The actual square footage is listed with an estimate of the number of employees based on Metro square footage estimates. For comparison, Table 9 also includes the number of acres developed during this time period for industrial and commercial development. Following the employee estimate based on acreage there is a substantial discrepancy between employees per square foot versus employees per acre.

This comparison should be analyzed closely to determine the more accurate method the City should follow for future employment projections. This discrepancy may be the result of underbuilding those properties that were developed during this time period.

Table 9
Commercial & Industrial Development 1994-1996

	Square Footage	Employees Based upon Square Footage	Acres	Employees Based upon Acres
Industrial Development	190,563	168	35.51	320
Commercial Development	35,455	49	9.09	182
Public Buildings	35,942	51		
Residential Care Facilities	6080	12		
Total	268,040	280		

Together, the employment estimate for 1994-1998 totals 351 new employees. Deducting this estimate from the 2,812 allotment established by Metro leaves a job allotment of 2,461. The following section determines the remaining capacity of those vacant lands zoned industrial and commercial within the city limits.

Employment Capacity

The determination of employment capacity is much more difficult to determine because many variables are difficult to predict and the information of the past is not very exact. Determination of remaining capacity follows a series of steps consistent with Metro methodology.

For vacant commercial land, employees per acre determine the future employment capacity. For this report, the three commercial zoning districts are combined into one category and an overall estimate is made based on cumulative acreage. According to Metro, the commercial zoning district has an average of 20 employees per net acre. Table 10 illustrates the process used as well as the employment capacity. The process followed in this report does not include changes as a result of the Main Street District. In addition, this analysis does not include redevelopment of existing commercial properties, except for those owned by TMT.

As discussed in the residential portion of this report, the reduction for schools, parks and churches was taken entirely from two parcels of land located in the R-7 zoning district. Because of this, the reduction illustrated in Table 10 reflects a

reduction for streets and right-of-way in a manner consistent with the residential zoning districts, but does not reflect reductions for schools, parks and churches.

Vacant Commercial Property 1998 (Gross Acres)	94.81
Vacant Commercial Property 1998 (Net Acres) Reduced for Streets and Right-of-Way.	71.17
Existing Commercial Job Capacity- (Net Commercial Acres/20 Employees per Acre)	1423

Determination of the employment capacity in the industrial zoning district follows the same methodology as the commercial zoning district. The difference between the two zoning districts is the estimate of employees per net acre. The industrial zone assumes 9 employees per net acre, whereas the commercial zone assumes 20 employees per net acre. The results of this analysis can be seen in Table 11.

Vacant Industrial Property 1998 (Gross Acres)	64.59
Vacant Industrial Property 1998 (Net Acres)	50.63
Existing Industrial Job Capacity- (Net Industrial Acres/9 Employees per Acre)	456

Based upon the method discussed above, the existing employment capacity is 1879 employees. Table 12 lists the job allocation for Cornelius, the estimated job creation between 1994 and 1998, and the reduction for home-based employment. Subtracting these items from the allotment leaves a remaining job allocation of 2375 jobs. These calculations leave Cornelius with an employment deficit of 496 jobs.

Table 12
Total Employment Capacity- Deficit/Surplus

Job Target Capacity (Table 1 Urban Growth Management)	2812
Credit for Projected Home-based Jobs	-86
Adjusted Jobs Target Capacity	2726
1994-1996 Estimated Job Creation	280
1996-1998 Estimated Job Creation	71
Estimated Jobs Capacity on Vacant Land	1879
Job Capacity <u>Deficit</u> /Surplus on Vacant Land	-496

Main Street District

While the Main Street Plan was not factored into the initial analysis for determining compliance with the Metro allotment, this section looks at the impact of the Main Street Plan, which was adopted in 1997.

The Main Street Plan is an aggressive approach to developing a uniform downtown for the City of Cornelius. The Plan focuses on an area between 10th Street and 20th Street running east and west, and the Oregon Electric Railroad to the north and the Southern Pacific Railroad to the south. This area emphasizes common design themes throughout the downtown area as well as encouraging high-density, two and three-story development. The vacant land inventory identifies this District as containing 12.02 net acres of vacant commercial land which, based on the average of 20 employees per acre, yields 240 employees in the Main Street District.

Chapter 4- Retail/Employment Plan of the Main Street Plan contains general recommendations about the location and intensity of employment-generating uses for the five subdistricts within the Main Street District. Based on the assumptions of the Main Street Plan, the Plan calls for 260 employees in the District by 2017. Compared to the previous estimate, the result is an increase of 20 jobs. Accounting for this employment increase in the total employment deficit the deficit is reduced to -476. While the City is still coming up short in meeting its employment allotment, it is beginning to take the required steps to implement the regional goals established by Metro, while also improving the community.

Population

The population estimates for Cornelius vary depending on the source of information and the method used to arrive at the estimates. The following population information is based upon the Metro Regional Data Book published by Metro. The Data Book provides population estimates for the years 1990 to 1997.

Population estimates are based on a combination of building permit issuance as well as an average growth rate for Washington County. In addition, persons per household are estimated as follows:

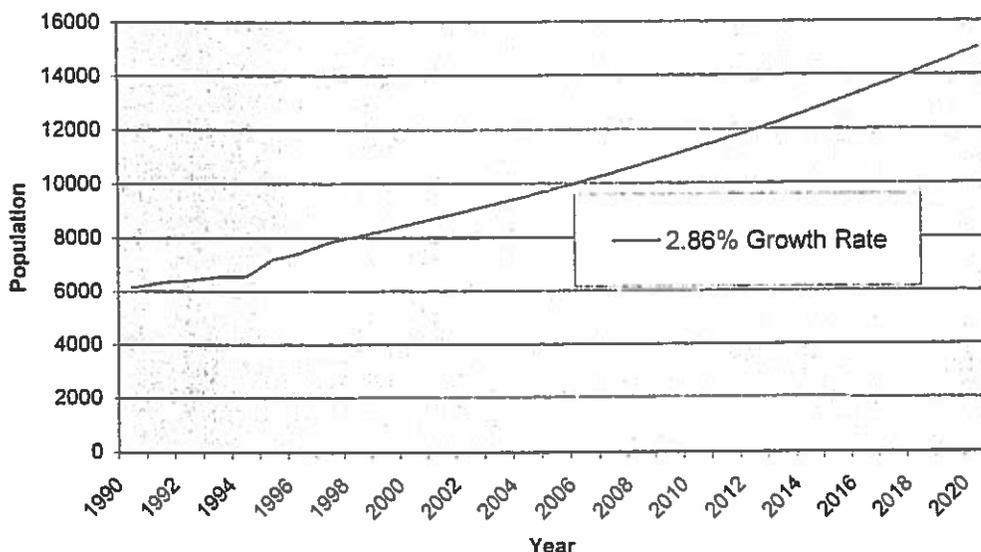
- 3.16 persons per single family dwelling unit
- 2.76 persons per multi-family dwelling unit
- 1.75 persons per manufactured dwelling unit

According to a source at Portland State University, residential development in Cornelius is occurring at an annual rate of approximately 2.86 percent. Based on a straight-line projection of this growth rate, Table 13 illustrates the future population of Cornelius. Continuing these numbers into the future with an average growth rate of 2.86% provides Cornelius with a population of just over 14,000 by the year 2020.

Because of the UGB, the City does not have the vacant land available to accommodate this population. This issue will be discussed further in the next section, but it is important for the City to recognize these constraints and develop a strategy to deal with them.

Table 13

Population Forecast Assuming 2.86% Growth Rate



Projected Demands for Housing and Employment

As mentioned earlier, population trends show that the City of Cornelius does not have adequate vacant land to accommodate continuation of the existing growth rate. Based on a continued average growth rate of 2.86% the 2017 population will be approximately 14,000, assuming a 1998 population of 8000. Assuming an average household size of 2.92 persons, an additional 2055 dwelling units will be necessary to accommodate a population increase of 6000 persons.

According to the analysis done earlier to determine capacity, the existing capacity within the city limits is 515 dwelling units, not accounting for the Main Street Plan. Including the Main Street Plan, the dwelling unit capacity is 732 dwelling units, well below the 2055 dwelling units necessary to continue past growth trends.

Factoring in the property outside the city boundary but within the UGB provides an additional 37.14 net acres after a 25% reduction for schools, parks, churches and right-of-way. While much of this property is currently identified as industrial, the market may demand a use other than industrial. Based on the industrial zoning and an average of 9 employees per acre, the employment capacity of the land outside the existing city boundary is 256 jobs. This accounts for approximately one half the employment allotment deficit the City is currently facing.

Assuming all the land outside the City boundary, but within the UGB, was zoned R-7 the additional dwelling unit capacity would be 213 dwelling units, giving a

total dwelling unit capacity of 963. Based on this, the dwelling unit deficit for the City of Cornelius based on a growth rate of 2.86 would be 1,092 dwelling units.

The 1,092 dwelling unit deficit calculated above must be reduced by 38 dwelling units to account for the Council Bluffs Mobile Home Park developed in 1998. This development was not accounted for in earlier calculations. This leaves the City of Cornelius with a dwelling unit deficit of 1,054 by the year 2017, assuming no urban growth boundary expansion, a continuation of the 2.86% growth rate, and all the vacant land in the UGB is developed as R-7.

Relation of Population and Capacity

Based on the development capacity mentioned above for the City of Cornelius, assuming all land outside the City boundary but within the UGB is annexed as R-7, and assuming a growth rate of 2.86%, the City of Cornelius will use all residentially zoned land by the year 2006, assuming development occurs at the maximum density.

House Bill 2709

Oregon House Bill 2709 requires that cities provide a development inventory for the five-year period from 1990 through 1995. To demonstrate the likelihood that residential development will occur at densities sufficient to accommodate housing needs for the next 20 years without expansion of the boundary. (ORS 197.296(4)(b)) Metro is required to provide a 20-year development inventory for the metropolitan region, not the individual cities.

It is not necessary for the City of Cornelius to demonstrate the likelihood that residential development will occur at densities sufficient to accommodate housing needs for the next 20 years, because this is done at the Metro level. Cornelius does have to show likelihood that residential development will occur at densities sufficient to accommodate the allotment established by Metro. This analysis has been provided in this report.

According to House Bill 2709, the City is required to determine actual density and actual mix of residential development since the last periodic review or last 5 years, whichever is greater. (ORS 197.296(3)(b)) The following pages discuss the actual residential development between 1990 and 1998. The average density for each of these years is illustrated in Chart One. In addition, Table 14 provides a summary of building permit activity.

Cornelius Development- 1990

In 1990, development in Cornelius consisted primarily of single-family residential dwelling units. Of the 66 residential permits issued, seven were for manufactured dwellings; one was for a duplex, while the remaining 58 were for detached, single family units. All the manufactured home permits were located within a mobile park therefore; individual lot size is not available on these units.

Other than the manufactured dwellings the residential development occurred in the R-7 zone, which allows a minimum lot size of 7000 square feet. The average lot size in 1990 was 9411 square feet, 2411 square feet larger than the minimum allowed. This density is 74% of the maximum number of dwelling units per net acre permitted by the zoning designation.

Cornelius Development- 1991

The 1991 development in Cornelius again consisted primarily of single-family residential dwelling units. Forty-five residential permits were issued. Of the 45 permits issued 4 were for four-plexes, one for a tri-plex, and two for manufactured dwelling units which were again located in a mobile park, individual lot size is not available. The remaining 38 permits were for detached, single family units.

Nearly all development occurred in the R-7 zone with an average lot size of 8658 square feet, 1658 square feet greater than the minimum allowed. This density is 81% of the maximum number of dwelling units per net acre permitted by the zoning designation.

Cornelius Development- 1992

The 1992 development in Cornelius again consisted primarily of single-family residential dwelling units. Forty-two residential permits were issued. Of the 42 permits issued 1 was for a tri-plex, and one was for a duplex. No permits were issued for manufactured dwelling units.

All development occurred in the R-7 zone with an average lot size of 9643 square feet, 2643 square feet greater than the minimum allowed. This density is 73% of the maximum number of dwelling units per net acre permitted by the zoning designation.

Cornelius Development- 1993

The 1993 development in Cornelius consisted exclusively of single-family residential dwelling units. Seventy-four residential permits were issued

All development occurred in the R-7 zone with an average lot size of 8779 square feet, 1779 square feet greater than the minimum allowed. This density is 80% of the maximum number of dwelling units per net acre permitted by the zoning designation.

Cornelius Development- 1994

The rate of development in 1994 increased dramatically, but the development still consisted primarily of single-family residential dwelling units. 125 residential permits were issued in 1994 of these; four were for manufactured dwelling units, three for duplexes and the remaining 118 for detached single-family.

1994 began to see more development in the A-2 zone, which allows multi-family, but most of the A-2 development consisted of single-family. Twenty-three permits were issued in the A-2 zone. The duplexes were all located within the A-2 zone. The average lot size in the A-2 zone was 9028 square feet, which is 5028 square feet greater than the assumed minimum lot size of 4000 square feet. While the regulations allow a maximum of 14 units per acre in the A-2 zone a minimum lot size of 4000 square feet was assumed to be consistent with Metro assumptions. This density of development occurred at 44% of the assumed maximum number of dwelling units per net acre permitted by the zoning designation.

The development that occurred in the R-7 zone had an average lot size of 8018 square feet, 1018 square feet greater than the minimum allowed. This density is 87% of the maximum number of dwelling units per net acre permitted by the zoning designation.

Cornelius Development- 1995

While the rate of development in 1995 was not as high as 1994, development still remained strong. The development still consisted primarily of single-family residential dwelling units with 96 of the 100 residential permits issued for single family detached units. The remaining permits included three for manufactured dwelling units and one for a duplex.

In 1995 eight permits were issued in the A-2 zone with an average lot size of 7589 square feet, which is 3589 square feet greater than the assumed minimum lot size of 4000 square feet. In the A-2 zoning designation, this density of development is 53% of the assumed maximum number of dwelling units per net acre.

The development that occurred in the R-7 zone had an average lot size of 7531 square feet, 531 square feet greater than the minimum allowed. This density is

93% of the maximum number of dwelling units per net acre permitted by the zoning designation.

Cornelius Development- 1996

Permit issuance reached its peak in 1996, with 137 residential permits issued. The breakdown of the permits includes 99 permits for single family detached residential and 39 permits for manufactured dwellings. No permits were issued for multi-family residential.

43 of the 137 permits issued were in the A-2 zone. The average lot size in the A-2 zone was 4545 square feet, which is 545 square feet greater than the assumed minimum lot size of 4000 square feet. This density of development is 88% of the assumed maximum number of dwelling units per net acre permitted by the zoning designation. This illustrates that developers are beginning to take advantage of the higher densities allowed in this zoning district.

The development that occurred in the R-7 zone had an average lot size of 7694 square feet, 694 square feet greater than the minimum allowed. This density is 91% of the maximum number of dwelling units per net acre permitted by the zoning designation.

Cornelius Development- 1997

Residential permit issuance in 1997 totaled 119, not as high as 1996 but still strong. The breakdown of the permits includes 55 permits for single family detached residential and 64 permits for manufactured dwellings. No permits were issued for multi-family residential.

Of the 119 permits issued 32 were in the A-2 zone. The average lot size in the A-2 zone was 5037 square feet, which is 1037 square feet greater than the assumed minimum lot size of 4000 square feet. This density of development is 79% of the assumed maximum number of dwelling units per net acre permitted by the zoning designation. This illustrates that developers are still taking advantage of the higher densities allowed in this zoning district.

The development that occurred in the R-7 zone had an average lot size of 5352 square feet, 1648 square feet less than the minimum allowed. This density is 131% of the maximum number of dwelling units per net acre permitted by the zoning designation. This is higher density is due to developments done as planned unit developments.

Past Residential Development- 1996-1998

While much of the residential development during the 1996-1998 timeframe occurred in the R-7 zone, the average residential lot size was approximately 4,935 square feet, which is 2,065 square feet less than the minimum lot size in this zone. This was made possible because of the planned unit development option and interest from developers. The planned unit development allowed flexibility in lot size, which resulted in smaller than normal lot sizes.

Accounting for all residential development in the A-2 and the R-7 zoning districts between 1996 and 1998, lot sizes averaged 1,104 square feet less than the minimum lot size. The explanation for the variance between strictly R-7 and the combination of R-7 and A-2 is that developers are willing to develop below the 7000 square foot minimum lot size, but they are not willing to go as low as the minimum lot size in the A-2 zoning district.

Table 14
Summary of Building Permit Activity 1990-1997

Year	Permits Issued in R-7	Average R-7 Lot Size	Permits Issued in A-2	SFR Permits Issued	MHP Permits Issued	Multi-Family Permits Issued	Average A-2 Lot Size	Percent of maximum permitted dwelling Units in R-7	Percent of maximum permitted dwelling Units in A-2
1990	58	9411	8	58	7	1		74	
1991	45	8658	3	38	2	5		81	
1992	42	9643	0	40	0	2		73	
1993	74	8779	0	74	0	0		80	
1994	100	8018	23	118	4	3	9028	87	44
1995	92	7531	8	96	3		7589	93	53
1996	94	7694	43	99	39		4545	91	88
1997	87	5352	32	55	64		5037	131	79
1998									

Chart 1 illustrates the R-7 development trends in Cornelius between 1990 and 1998. According to Chart 1 the average lot size between 1990 and 1992 averaged between 8500 square feet and 9500 square feet, well above the minimum lot size of 7000 square feet. The average lot size peaked in 1992 and has been decreasing since. Between 1995 and 1996 the average lot size leveled out to approximately 7500 square feet with lot size between 1996 and 1998 actually falling below the 7000 square foot minimum lot size. The trend over the past 6 years has been toward more efficient use of the available vacant land.

Chart 1
Average R-7 Lot Size Trend

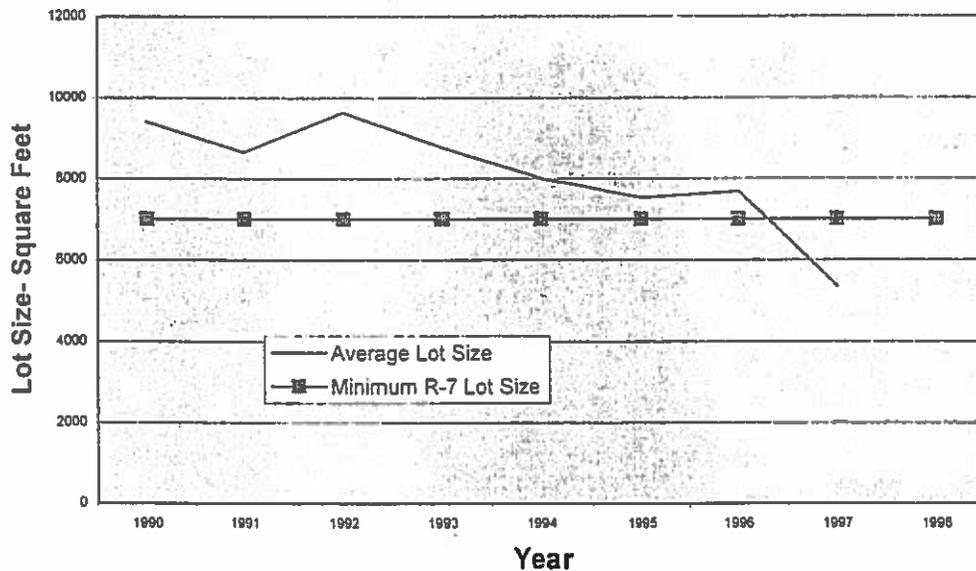
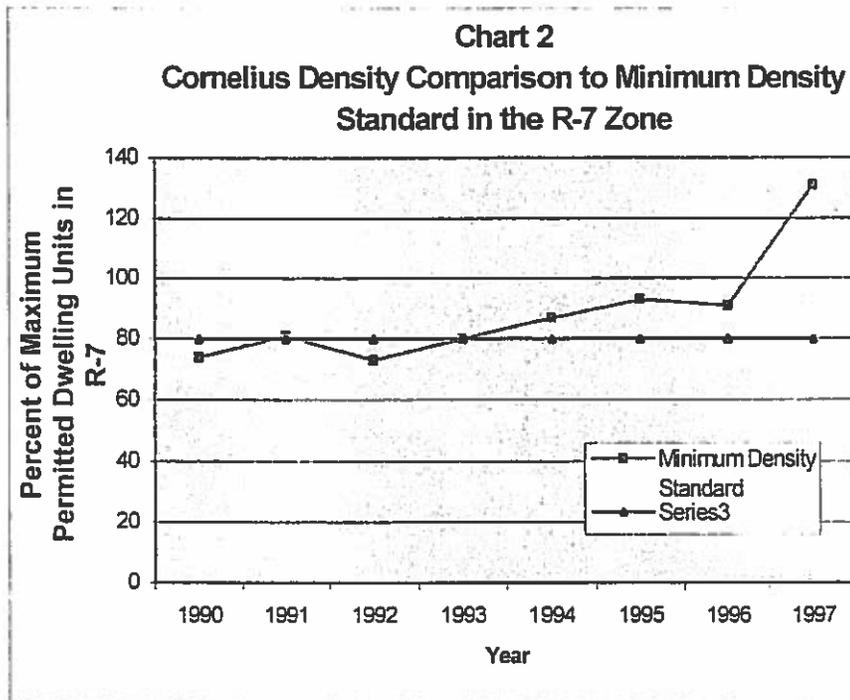


Chart 2 shows a comparison of the average lot size in the R-7 zone, between 1990 and 1998, to a straight line of 80% of the maximum number of dwelling units per net acre permitted by the zoning designation. In the R-7 zone, 80% of the maximum number of dwelling units would equate to a maximum lot size of 8400 square feet. Chart 2 illustrates that the average lot size has been less than 8400 square feet since 1993. While the City does not currently have a minimum residential density standard, since 1993 average lot size has fallen within the recommended 80% of the maximum number of dwelling units per acre suggested by Metro.



As mentioned earlier, the trend of higher density is due in large part to the planned unit development that has allowed the City and developers to be flexible in development and allow reduction in lot size. Chart 3 illustrates the proportion of development over the last eight years.

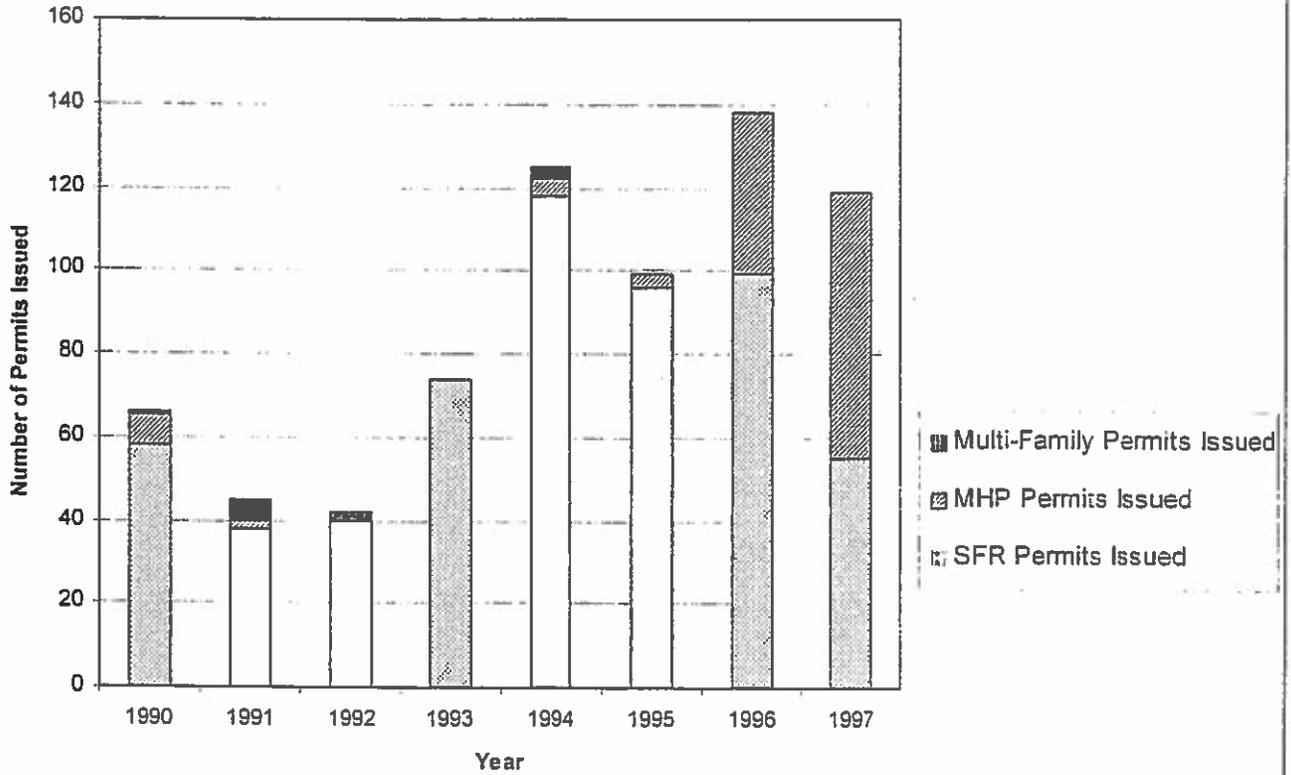
Impact of the Market

While many developers chose to go with smaller lots for detached single-family dwelling units and some attached units, most developers still did not pursue the multi-family dwelling units. This trend continues even though there is adequate vacant land zoned for multi-family units.

In addition, those developers that have developed near maximum capacity in the A-2 zone are having a difficult time selling their units. In two cases, developers have been approved for attached single-family dwelling units but the attached units were not selling. The developer came back to the City to request building the remaining units detached. These are two examples where the market ultimately determines the maximum density and the type of housing allowed. The City will need to determine the best balance between what the market will allow and what the limited vacant land will allow.

As mentioned earlier, developers are willing to develop below the 7000 square foot minimum lot size, but they are not willing to go as low as 3111, which is the minimum lot size in the A-2 zoning district. The periodic review process should look closely at this occurrence and use it to accommodate development that will succeed in the Cornelius market.

Chart 3
Residential Building Permits 1990-1997



CITY OF CORNELIUS

VACANT LAND INVENTORY

JULY 2004

The acreages identified in the following tables are estimations based on aerial photographs and Washington County Tax Assessor Maps. These estimates should not be used for planning purposes actual surveys or further research should be conducted by interested parties.

VACANT LAND INVENTORY

	<u>Map #</u>	<u>Tax Lot #</u>	<u>Size of Parcel</u>	<u>Zoning District</u>
1.	1N333CA	00900	12.52 Acres	Industrial
2.	1N333CA	01001	@3.00 Acres	Industrial
3.	1N333CA	00700	@3.70 Acres	Industrial
4.	1N333CA	00100	3.60 Acres	Industrial
5.	1N333CA	00400	3.75 Acres	Industrial
6.	1N333DB	00700	2.43 Acres	Industrial
7.	1N333DB	00600	1.68 Acres	Industrial
8.	1N333DB	00500	1.82 Acres	Industrial
9.	1N333DB	00400	4.11 Acres	Industrial
10.	1N333DB	00300	2.98 Acres	Industrial
11.	1N333DB	01200	@1.33 Acres	Industrial
12.	1N333DB	01800	2.09 Acres	Industrial
13.	1N333DB	01900	3.04 Acres	Industrial
14.	1N333DA	02100	@1.42 Acres	Industrial
15.	1N334CB	00100	@2.00 Acres	Industrial
16.	1S304DB	02100	@1.00 Acres	Industrial
17.	1S304DC	04600	@2.00 Acres	Industrial

Approximate Total Industrial Acres = 52.47

	<u>Map #</u>	<u>Tax Lot #</u>	<u>Size of Parcel</u>	<u>Zoning District</u>
1.	1S302B	00300	1.36 Acres	Commercial (C-2)
2.	1S302B	00402	1.36 Acres	Commercial (C-2)
3.	1S302B	00404	@1.30 Acres	Commercial (C-2)
4.	1S302B	00500	@3.50 Acres	Commercial (C-2)
5.	1S302B	00600	@2.60 Acres	Commercial (C-2)
6.	1S302B	01400	@1.50 Acres	Commercial (C-2)
7.	1S303AA	00200	0.55 Acres	Commercial (C-2)
8.	1S303AA	00300	0.15 Acres	Commercial (C-2)
9.	1S303AB	00100	0.49 Acres	Commercial (C-2)
10.	1S303AB	02600	0.12 Acres	Commercial (C-2)
11.	1S303BA	00100	1.00 Acres	Commercial (MSG)
12.	1S303BB	00100	1.01 Acres	Commercial (MSG)
13.	1S304AB	00400	0.34 Acres	Commercial (C-2)
14.	1S304AB	00300	0.92 Acres	Commercial(C2/MS)
15.	1S304BB	00100	1.32 Acres	Commercial (C-2)
16.	1S304BB	00300	2.32 Acres	Commercial (C-2)
17.	1N333CC	03700	12.99 Acres	Commercial (C-2)
18.	1N333CC	02400	@0.50 Acres	Commercial (C-2)
19.	1N333CC	02500	0.17 Acres	Commercial (C-2)
20.	1N333CD	03600	0.34 Acres	Commercial (C-2)
21.	1N333CD	03800	@0.75 Acres	Commercial (C-2)
22.	1N333CD	04100	0.53 Acres	Commercial (C-2)

23.	1N333CD	00100	1.72 Acres	Commercial (C-2)
24.	1N333DD	07000	@0.13 Acres	Commercial (MS)
25.	1N334CC	00500	0.86 Acres	Commercial (MS)
26.	1N334CC	00300	1.43 Acres	Commercial (MS)
27.	1N334CC	00400	1.36 Acres	Commercial (MS)
28.	1N334CC	00100	@0.85 Acres	Commercial (CE)
29.	1N334CD	00300	@10.0 Acres	Commercial (CE)
30.	1N334CC	00301	@0.62 Acres	Commercial (CE)
31.	1N334CC	00100	9.21 Acres	Commercial (CE)
32.	1N334DC	04500	@1.50 Acres	Commercial (CE)
33.	1N334DC	04600	@2.50 Acres	Commercial (CE)
34.	1N334DC	01900	2.65 Acres	Commercial (CE)
35.	1N334DC	01901	@0.72 Acres	Commercial (CE)
36.	1N334DC	01801	@0.95 Acres	Commercial (CE)
37.	1N334DD	07700	2.53 Acres	Commercial (C2)
38.	1N334DD	08100	1.17 Acres	Commercial (C2)
39.	1N335C	00500	@2.50 Acres	Commercial (C2)
40.	1N334CC	02000	@0.30 Acres	Commercial (MSMU)

Approximate Total Commercial Acres = 76.12

	<u>Map #</u>	<u>Tax Lot #</u>	<u>Size of Parcel</u>	<u>Zoning District</u>
1.	1N333CC	13500	@0.11 Acres	Residential (MHP)
2.	1N333CC	01600	@0.59 Acres	Residential (A-2)
3.	1N333CC	02100	@0.30 Acres	Residential (A-2)
4.	1N333CD	00400	@0.45 Acres	Residential (A-2)
5.	1N333CD	04800	@0.61 Acres	Residential (A-2)
6.	1N333DC	00700	@1.00 Acres	Residential (A-2)
7.	1N333DC	00400	0.53 Acres	Residential (A-2)
8.	1N333DD	01100	@0.17 Acres	Residential (A-2)
9.	1N333DD	00300	@0.30 Acres	Residential (A-2)
10.	1N333DD	09000	@0.16 Acres	Residential (R-7)
11.	1N334CB	00200	6.70 Acres	Residential (R-7)
12.	1N334CB	00500	3.09 Acres	Residential (A-2)
13.	1N334CA	00201	@3.50 Acres	Residential (A-2)
14.	1N334CA	00200	@0.17 Acres	Residential (A-2)
15.	1N334CC	03100	0.90 Acres	Residential (R-7)
16.	1N334DB	00400	@1.50 Acres	Residential (R-7)
17.	1S303AB	03100	11.26 Acres	Residential (R-7)
18.	1S303AC	04200	@0.50 Acres	Residential (R-7)
19.	1S303D	00402	1.01 Acres	Residential (FD-10)
20.	1S303AD	02500	@1.50 Acres	Residential (R-7)
21.	1S303AD	00400	@1.00 Acres	Residential (R-7)
22.	1S303AD	00500	@1.00 Acres	Residential (R-7)

23.	1S303BB	02200	0.21 Acres	Residential (A-2)
24.	1S303BB	08100	@1.50 Acres	Residential (R-7)
25.	1S303BC	03900	0.48 Acres	Residential (R-7)
26.	1S303BC	04002	0.20 Acres	Residential (R-7)
27.	1S303BC	03401	@0.20 Acres	Residential (R-7)
28.	1S303BD	00203	@0.33 Acres	Residential (R-7)
29.	1S304AC	03900	0.88 Acres	Residential (R-7)
30.	1S304AD	00400	1.52 Acres	Residential (R-7)
31.	1S304AD	00600	1.46 Acres	Residential (R-7)
32.	1S304AD	00800	@2.00 Acres	Residential (R-7)
33.	1S304BA	09900	@0.37 Acres	Residential (R-7)
34.	1S304BD	13300	@0.50 Acres	Residential (R-7)
35.	1S304BD	00900	0.50 Acres	Residential (R-7)
36.	<u>1S304BD</u>	<u>01100</u>	<u>1.53 Acres</u>	<u>Residential (R-7)</u>

Approximate Total Residential Acres = 48.03

Totals:

Industrial	52.47 Acres
Commercial	76.12 Acres
Residential	48.03 Acres