INTRODUCTION

The landscape and vegetation patterns of Corvallis, located in the Mid-Willamette Valley of Oregon, have been subjected to significant change under human influence. White settlement rapidly altered the fire induced prairie-open woodlands complex that was maintained with annual fires set by Indians (Habeck 1961, Johannessen 1971). Urbanization has imposed another distinct alteration to vegetation and resulting landscape patterns. The city limit of Corvallis with its expansion has subdivided and developed more urbanized density from surrounding, primarily agricultural larger land units. The existing pattern imposed by buildings, infrastructure, lot size and configuration, and vegetation is the result of many factors, some of which include economic, social, transportation, as well as industry and institutional influences.

The land claims of J. C. Avery and William F. Dixon formed the plat of the Original Town of Marysville recorded in February of 1851, and portions of these claims were later incorporated to become the City of Corvallis (Martin 1938). The confluence of the Marys River and Willamette River provided typical impetus for European settlement with primary transport in that era being the river network. Ferries operated on both rivers providing transport for goods, animals and people until a bridge over the Mary’s River was built in 1862 (Martin 1938). Navigation was a very important and focal transportation means until eclipsed in the 1870s when railroad construction linked Corvallis regionally and provided faster ground transport. The network of original dirt (seasonally either mud or dust) streets used for horses and pedestrians have also evolved to meet the needs of present automobile focused transportation. The continuing evolution of transportation
systems imprints a changing arterial framework onto the built landscape. Both Corvallis rivers are now spanned and changed with expansion and refocus of the built landscape and their flows also constrained and altered by distant flood control projects. Railroad lines have been constructed, and some removed, leaving remnant patterns that continue to strongly influence the landscape. Road networks change to accommodate increasing vehicular transportation needs and new development continues expansion of that system.

Housing in Corvallis during different time periods has been influenced by social change and changing perceptions of housing needs. Economic cycles have greatly influenced the rate of annexation to city limits and the resulting types of residential development. ‘Boom and bust’ cycles of growth and development started early in the city’s history and have continued, now tending to mirror the regional and national economic condition. These cycles become illustrated in the landscape pattern when expansion to the city limit occurs providing more land available for denser residential development. Development imprints distinct patterns on the landscape that often provide visible boundaries between eras of construction. The style and size of homes, the size and shape of lots, and the street configuration changes. Each time period, as a result, becomes reflected in the built landscape.

These changes to the built landscape have resulted in variation of landscape patterns within Corvallis city limits. Pattern distinctions produced will be illustrated by examination of three different development time spans. Geographic Information System (GIS) data and aerial photography were utilized to examine where pattern boundaries occur. The year of annexation to the city was found to have correlation with those visible boundaries. Three distinguishing time spans were then established that grouped the general
changes in patterns. Areas of north Corvallis will provide a ‘typical’ illustration of the grid being imposed on the landscape for years within each categorized time span. South Corvallis was initially examined for potential inclusion but discarded due to the irregularity, size, and fractured nature of residential development that has occurred in this area. However, similar patterns do occur in both areas of the city. North Corvallis was utilized because of plats of larger land parcels, continuity between platting and construction, and conversion to primarily residential uses resulting in more expansive and well defined boundary development between patterns. Maps were created for each time span to illustrate Corvallis’ growth with annexations and these also display the imposed pattern of street and property boundaries. Discussion will focus on the major changes occurring during each time period that define the resulting patterns. Census data will illustrate the increasing population that city growth is accommodating. Population totals have continually increased while the number of persons per family has declined. Data from the 1880 census indicates 4.5-5 persons per family in Corvallis (Martin 1938). 1990 Census figures for the city indicate there are now 2.92 persons per family (U. S. Census 1990). These changes have increased demand for urbanized development and as a result also influenced landscape patterns.

**Early Development: 1851 - 1948 - (Map 1)**

The Land Ordinance Act of May 20, 1785 established “survey before settlement” policy and this imprinted the Corvallis landscape with patterns of the rectangular survey system (BLM 2001). These formal land surveys inventoried and documented existing
conditions as well providing their primary purpose for efficient and orderly settlement into new territory. In 1850 the Donation Land Claim Act provided for survey of existing land claims, those settled prior to formal survey and conveyance (BLM 2001). Claims of up to 640 acres (one square mile) were permitted and this imposed an initial landscape pattern of large, agricultural land parcels over the area that would become Corvallis.

The rapid division of J.C. Avery’s land claim into much smaller parcels initiated the pattern which then extended within the city core when subsequent development occurred:

“Immediately upon his building his cabin Mr. Avery fenced off about twelve acres of land which is still known as the “little field”; which, in the winter of 1847-48 he staked off a few town lots, the first measured off in the future town of Marysville and present city of Corvallis. These
occupy a position at the top of the high ground that rises from Mary’s river, at the southern extremity of Second Street” (Fagan 1885).

In 1851 tracts of forty acres were deeded by each J. C. Avery and William F. Dixon that became the City of Corvallis (Martin 1938). The Town of Marysville was platted as a regular grid pattern of lots running parallel to the Willamette River. Description from the plat describes the block pattern as “All the streets are 80 feet wide and alleys 14 feet wide and all lots are 50 by 100 feet” (Benton County Deed Records Book 82, Page 70). This initial development area was on flat, level land on the higher, westerly Willamette River bank. Expansion to the city occurred with both north and westward annexations during this period and the only major topographic features encountered were relict river terracing and a portion of Dixon Creek.

The major factor influencing the built landscape during this period are the changes in transportation modes and the resulting infrastructure network. Early city transport focused on the Willamette and Marys Rivers. Numerous ferries crossed to the easterly bank of the Willamette River and steamers on that river linked the waterfront docks with markets to the south in Harrisburg and Eugene, and to the north in Albany, Salem and Portland (Munford 198-). It wasn’t until 1913 that the first bridge was built in Corvallis that crossed the Willamette (Gallagher 1993). Railroad lines were constructed through the city extending linkages farther south in Oregon and on to San Francisco, and beyond Portland continuing northerly to Tacoma and Seattle. However, it was the automobile that would eventually dominate and influence changes to the developing landscape pattern even more. Early city streets, used for pedestrian and horse traffic, in 1879 were described by Wallis Nash as:
“The street, in front, was a wide sea of slushy mud when we arrived, with an occasional planked crossing, needing a good sober head and a good conscience to navigate safely after dark.”

By 1920 construction projects had transformed these same streets into a paved transportation network that accommodated the burgeoning number of automobiles (Gallagher 1993). Automobile ownership propelled the construction of garages in residential neighborhoods. This transition to the automobile, perhaps more than any other factor, continues to greatly influence the built landscape pattern.

Physical growth resulted in the urbanization of larger agricultural land parcels. An abrupt boundary existed between urbanized, small lots and these surrounding larger tracts. Growth of Corvallis, in area and also population, was slow and fairly steady during this time period encompassing almost 100 years (Fig. 3). Due to slow growth rates and variations in the economy, this condensed area of the city’s built landscape contains a wide-ranging representation of architectural styles and trends. In this residential core area of the city homes progressed during this time period from frontier cabins to homes with kitchens and baths, electricity and telephones, and municipal water and sewer services. The size and type of homes constructed were strongly influenced by economic cycles and

Fig. 2 - Corvallis Riverfront in the late 19th century contrasted with Downtown Corvallis in ca. 1930. The era of river transport progresses to age of the automobile. (Gallagher 1993)
social trends. There were many boom and bust economic times that occurred during this period. The city in 1851 benefited from its location on the transportation route to the prosperous mining areas to the south (Martin 1938). The depression in the early 1930s and the war period, 1941-1945, brought both growth and construction to a standstill in the city. Annexations reflect the impact of these events and there are none occurring in Corvallis during these periods (see Map 1). Expansion and growth of the original Corvallis College, chartered in January 1858, became established as a major economic force in the city and also greatly influenced housing due to attracting an increasing student population to the city.

The pattern imposed on the landscape during this time period was that of a dense rectangular (generally 214 by 300 feet) grid of blocks formed by the street network, each block being divided into smaller individual lots. Residential lot sizes generally continued developing with the originally established 50 by 100 feet dimensions throughout this period of the city’s growth. This grid pattern had endured repetition through times of major social, economic and transportation change. Housing in this area was increasingly altered, moved, removed and replaced to meet changing needs, but the land division had remained fairly consistent. The changes as a result of post-war population increases,

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Fig. 3 - Population of the City of Corvallis 1870 - 1940 (Bureau of Municipal Research and Service, 1958) and the area of the city. (City of Corvallis GIS).
increased demand for housing, accommodating the rapidly expanding automobile transportation focus, the changing style of housing and growing consumerism in society stimulate change in this status quo lot size to establish a visible boundary that remains in the city’s built landscape.

**Suburban Era 1949 - 1970** - (Map 2)

A development gap created by the Depression and World War II extended over a long enough time period that when residential construction began again it imprinted a visible boundary in the landscape pattern of the city. This era can be generalized as being one of rapid suburbanization and integration and expansion of the automobile into the landscape. Until this time period growth had been rather slow and gradual over an extended time period. The city limits in the previous 99 years increased the area of the city to over two-square miles. During this following 21 year time span the size of the city then increases almost fourfold, encompassing 7.96 square miles, to accommodate the large population increase. Growth occurring in Corvallis was indicative of growth happening in the United States in general. The country, Corvallis included, was rapidly creating suburbia to meet housing demands following the end of World War II. Fringe agricultural lands adjacent to the city core were rapidly being

<table>
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Fig. 4 - Population of the City of Corvallis 1950 - 1970 (U. S. Census) and the area of the city (City of Corvallis, GIS).
converted into residential subdivisions as the population ballooned. Pressure was placed on the existing infrastructure and expensive expansion was demanded. These additional people required housing, utilities, transportation, education and other services.

Lot sizes increased from those evidenced in the Early Development period. The typical 50 by 100 foot lot (5000 sq. ft.) now becomes larger and more irregular. Rigid block patterns are not being perpetuated. The street network begins to imprint a different, more free-form pattern on the landscape. Cul-de-sac streets are first constructed in the city during this time period.

The local economy at this time was dominated by government, retail, and service related businesses (League of Women Voters 1964). Camp Adair, a large World War II infantry training base north of the city, had remnant influences on the area as it transitioned to use as an Air Force Station. The University was continuing expansion and enrollment in the early 1960s was over 10,000 (League of Women Voters 1964). This also added additional pressure for increased student housing.

The post World War II housing boom was imprinting a new style on the built landscape. Housing demand increased and land was quickly being converted from farms to tract housing developments. The suburban ‘ranch’ architecture was rapidly replicating
over a large area of the city. Housing was now changing to better integrate the automobile into lifestyle. Garages were no longer small utility structures relegated to the alley. They moved to the front streetscape, often now a prominent feature of the facade of the house. This change, a nationwide trend in housing of this period, is in itself a major topic of study. Suburbia has imprinted a distinctive pattern on the Corvallis landscape, with the changing street networks, increased and irregular lots, change in both size and configuration of house and garage, shift to developing predominantly monostyulous one-story ranch homes, and the large physical area of the city developed in this style.

The expansion of the city was converting the surrounding farmland to residential use at a very rapid rate. Development began impacting riparian areas and streams and drainage patterns were being altered to maximize site potential. Residential areas were now advancing quickly to higher elevations in north Corvallis. The Willamette River and Marys River had increasingly become used for wastewater transport. Concerns in the late 1960s and early 1970s about growth, the economy and the environment led to interest in land-use planning (Rohse 1987). This shift in approach to development and growth, as well as major changes in the economy, provides another boundary evidenced in the landscape.

Refocusing Growth 1971-Present - (Map 3)

The city had previously administered it’s own zoning ordinance, but in 1973 a statewide program of land-use planning was adopted. This is perhaps the major factor influencing the landscape patterns during this latest time period. This period can be
generalized as a continued time of rapid urbanization of land, a changing environmental focus, and a change in the major economic forces influencing the city.

Perhaps the major theme from the statewide land-use planning implementation effecting landscape patterns was the increased density demanded within city limits. The creation of the urban growth boundary forced density within urban areas while limiting the conversion of farmland to residential uses and also attempts to limit the sprawl of residential land-use.

The explosive population and physical growth typical of the Suburban Era continues with a transition to a more steady phase of increase in the present year. Between 1960 and 1980 the city’s population and area were doubling and the landscape pattern of dense urban residential was continuing to rapidly extend into newly annexed areas. Lot sizes continued to be similar to those of the Suburban Era and are gradually decreasing in area to conform with the densification demands of the statewide land-use goals. Residential patterns have now rapidly advanced into areas previously not advantageous for development; wetlands, hillsides, and sites with utility service challenges, due to greatly increasing property values. The street network imposed during this period becomes more free-form and the cul-de-sac is now a major landscape feature. Street widths have gradually decreased to reduce the land bank used by the transportation network.

<table>
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<tr>
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<td>2000</td>
<td>52215</td>
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<td>13.55</td>
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Fig. 5 - Population of the City of Corvallis 1980 - 2000 (U. S. Census) area of the City of Corvallis.
The economy of the city continues to be focused on government, education, retail and service but in the early portion of this era it is changed by the addition of a major manufacturing firm (Hewlett-Packard). This change, and continued overall increases in student population have compounded the demand for residential development.

Housing style begins changing from the majority single-story ranch house to a mix with more two-story homes. The automobile remains solidly focused in the landscape with garages increasing in size and still a facade feature. As the automobile’s impact on social change and the loss of the old style of neighborhood become concerns new trends in planning begin to raise terms like ‘neighborhood village’, ‘neo-traditional’ all glancing back to older development eras. Questions resulting from the impacts of current transportation methods on the environment, economy and society are beginning to be answered with changes in development design philosophy.

Recent planning efforts have shown a shift to embracing aspects of development most prevalent during the Early Development period; alleys, block patterns, neighborhood centers. Planning documents have used photos from the oldest area of the city as examples to illustrate these design concepts (West Corvallis - North Philomath Task Force 1996). These changes in community planning efforts are just beginning to imprint on the landscape and may well serve to form a new boundary between landscape patterns.
SUMMARY

Analysis of residential development determined three potential boundaries between landscape patterns established in the City of Corvallis. GIS and aerial photography were utilized to examine where boundaries occur. The year of annexation to the city was found to have correlation with those visible boundaries. Three distinguishing time spans were then established that grouped the general changes in patterns. These groupings were categorized as the Early Development period (1851 - 1948), Suburban Era (1949 - 1970) and the period of Refocusing Growth (1971 - Present).

Each of these time spans then was examined for general land division features that prevailed. The Early Development period initially imprinted a pattern of irregular, large, agricultural land parcels on the landscape. These were quickly replaced with a rigid grid pattern of blocks forming the initial city that was then reproduced and replicated as the city slowly expanded. Patterns became distinctly different during the Suburban Era, with larger lot sizes and the beginning of a more free-form street network which included the introduction of the cul-de-sac into the landscape. These patterns become morepronouncedly free form in the Refocusing Growth period as intricate patterns of cul-de-sac streets extend into the hillsides of Corvallis. This most recent residential development pattern may be beginning to transition because of planning efforts to refocus on ‘neighborhood village’ formation.

Major influences to landscape patterns were generally found to include economic conditions social changes, the evolution of transportation systems, as well as industry and institutional influences. The major influences during each time period were noted and
briefly examined. Many of these factors and trends raised additional and larger questions which require more extensive exploration than is possible within the scope of this project. The largest influence to residential landscape patterns during all of these time periods was determined to be change occurring in transportation modes. Landscape patterns have changed as transportation shifted from river transport to the railroad, and the continued expansion and focus on the automobile. Another recent influence has been the implementation of statewide land-use planning which has increased urban densities which influences landscape patterns.
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