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Fatah Boualamallah

The University of Montana

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MISSOULA ENTRYWAY CORRIDORS:
DESIGN GUIDELINES AND STANDARDS FOR DEVELOPMENT

by

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B.S.; Architecture, University of Tizi-Ouzou

Tizi-Ouzou, Algeria, 1988

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This paper is dedicated in memory of my parents.
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CHAPTER 1

INTRODUCTION

A city's image is a product of many images that make up a person's first impression of a settlement. Peoples' aesthetic sensibilities are affected by how they see a city. According to Kevin Lynch, a city is "a piece of architecture on a larger scale." A city's impression can be enriched by designing its urban structures, such as entryway corridors, to be comprehensive identifiable, and legible. Entryway corridors are important features of an urban environment. They project the community's identity, character and appearance.

A city's image depends on distinct human and natural factors. Its relationship to nature often indicates the quality of the man-made environment. If the city's design is sensitive to this relationship, then it will enhance the experiences of those who visit or live in the city.

Because driving is rated as a "favored outdoor activity" in the U.S., the


function and appearance of the traveled paths are important to our mental health and aesthetic sensibilities. For instance, strip developments are the most unrewarding urban environment to travel through.

Aesthetically pleasing urban design is lacking along these corridors. Thus, problems of community identity exist immediately, especially for first-time visitors. This should, therefore, be a serious concern by politicians, planners, designers, and citizens regarding the images, a city projects at its entrances.

Missoula, Montana, has had problems with its first impressions. During the last several decades, the city has seen substantial development along Brooks, Reserve and Broadway Streets. Zoning laws still govern the design of development in these areas. Other land use regulations, such as buildings heights, building uses, parking mandates and density population do little to guide how the built environment should be considered in a design-sensitive manner.

Today, "urban corridors planning" is emerging as the tool of the '90's to formalize development which enhances urban landscape. Local and Federal incentives are increasing for good design. Incentives should control and guide development along the City's main arterials with respect to community's values. These values reflect quality of life to the natural beauty and character of its locale.

In Missoula, many of the City's planning documents have focused on the

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3Currently, funds are available by ISTEA for projects that add cultural aesthetic and environmental value to the transportation system.
urban corridor issue. The current efforts have led Missoula's Office of Planning and Grant (OPG) to draft an "Entryway Corridor Overlay" zone in the City zoning ordinance. This will apply specific land use regulations to the Brooks and Reserve Streets Corridors.

This paper develops design standards and guidelines for Missoula's entryway corridors through a study of existing conditions of the Brooks Street Corridor and the Bitteroot South Gateway. These corridors will be analyzed and defined in their roles for shaping the regional and local identity of Missoula.

**Problem Statement**

A visual survey of the Missoula landscape reveals a dual urban character between the city's downtown area and its major entryway corridors. Along Brooks, Reserve and Broadway Streets, development evolved in ways that are alien to the integrity and order which characterize the downtown. This disharmonious character affects the image and identity of the community as a whole, and it may lessen the attraction visitors and potential employers may have to the area.

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4Missoula Office of Planning and Grant, *Entryways Corridor Regulations*, (Missoula, Mt.: Office of Planning and Grant (OPG), 1994)

5Currently the only picture postcards available for tourism propaganda are those of the downtown area.
Currently, the downtown character is a result of the quality of its visible attributes. The built environment is integrated with the natural setting. The surrounding mountains, the urban forest, and the Clark Fork River reinforce the sense of context and provide visitors with positive, lasting impressions.

By contrast, the entryway corridors suggest an urban environment characterized by visual blight and functional problems. Signs, parking, landscaping and buildings constitute the visual envelope of the corridor. Their lack of integration and pleasant design has led to disorganization and fragmentation of the viewscape.

This type of disheveled development lacks positive identity and relationship to the natural surroundings. Moreover, the absence of street-life that is so important to a healthy urban experience, has condemned these corridors to function as mere transportation conduits.

The visible sense of disorder, lack of spirit and confusion apparent at these major entryways reflects poorly on the image of the community. In fact, it proves local official apathy to a decades-old problem.

The poorly organized spatial structure poses operational problems to the roadway itself. These problems are further aggravated by poorly defined access points and the disruption of movement caused by the chaotic nature and number of signs within the corridor. The accompanying lack of pedestrian walkways has left
the car as the only connection between developments. Increased exhaust and traffic congestion puts the public health and safety at greater risk.

The visual and functional attributes that enhance the urban character of these corridors depend on design criteria addressed by land use regulations and site planning standards adopted by a city or county. The current zoning regulations applied to land use control within the city and county (Missoula Zoning Ordinance, 1988, and Missoula County Ordinance, 1988), do not provide sufficient design guidelines for acceptable development of Missoula’s entryway corridors. With the certainties of rapid urban growth and the absence of clear design recommendations in the land use regulations, sub-standard development will continue in the Missoula community.

**Purpose**

The intent of this study is to develop local design guidelines and standards for development and alterations that will occur along the major arterial entering Missoula. These guidelines will suggest preferred aspects of design for future development and improvements to enhance the image and function of the entryway corridors.

This paper proposes standards to establish design criteria allowing creativity and flexibility over time. It is hoped that this study will assist the city of Missoula
in the development of its corridor design standards and achieve the aesthetic goals stated in its comprehensive plan.

**Methodology**

This paper utilizes a case study approach in addressing the problems of entryway corridor design to the city centers of Missoula. There are three major corridors. The example chosen for purpose of study is the Brooks Street Corridor along Highway 93 from the Mount Street intersection to the buckhouse Bridge. The other two major entryway corridors are: The Broadway Corridor between the Russel Street intersection and the Reserve Street Bridge at Broadway (Figure 1). The study is a descriptive analytical approach investigating development along the Brooks Street Corridor. A literature search for material related to corridor design was undertaken. A detailed field analysis of characteristic and design problems along the Brooks Street Corridor was also undertaken. Maps, photographs, and drawings are used to illustrate circumstances related to location, and design. The study is confined to the “zone of influence” which consists of 250 feet on both sides of the Brooks Street Corridor, measured from its center line (Figure 2).
Figure 1. Missoula Entryways Corridor and The Bitterroot Gateway area
A. A typical corridor includes the street, sidewalks, and front yards between building facades.

B. The larger zone of influence affecting a corridor extends well beyond the building facades, and into the rear yard of a property.

Figure 2. Zone of influence in the corridor.
CHAPTER 2

MISSOULA ENTRYWAY CORRIDORS

Problem of Design in Development at the Entryway Corridor

Brooks Street is a stereotype image of a commercial strip. This roadway environment is made up of many unsightly and dysfunctional features. The common elements viewers see from the road are a clutter of signs, large unscreened expanses of parking pavement, overhead utility lines, poorly delineated driveways, inadequate pedestrian amenities, and uncoordinated public and private improvements. In addition, the road contains the same fast-food restaurants, gas stations, drive-in businesses and large retail stores found in towns all across America.

Visual Problems

Signs

The number, size and type of signs along the strip is overwhelming. The viewer will note the wall-mounted, banner, free standing and portable signs. They
line the urban roadway usually oriented to the street and directed towards motorists.

In areas of higher competitions, the signs are bigger, taller and brighter. They generate clutter, and look out-of proportion with adjacent signs on nearby properties. Most of signs are poorly designed with garish material and inappropriate colors. Many lack detail in their architecture, integration in the development, and appear incompatible with natural surrounding.

Gas station signs are the most prominent visual features in the corridor. These signs are large and high and can be seen from great distances. They show similar design characteristics at different locations, and appear as confusing landmarks due to a lack of distinction and harmony in their urban settings.

Increasingly, signs compete for attention and location. They are aggressively targeted to motorists, urging themselves on passers-by with their "gaudy" style and barrage of information. Their arrangement, shape, material, color, and information contribute to a visual chaos which defeats their own goal of quick recognition. Furthermore, they may pose safety problems for motorists (Figure 3, 4).

\[6\text{Kevin Lynch, Site Planning, (Cambridge, Mass.: Massachusetts Institute of Technology, 1963), 338.}\]
Figure 3. Sign Problems: Illustration 1.

Figure 4. Sign problems: Illustration 2.
Landscaping

Landscaped areas found at the frontage of the road consist of sodded strips, shrubs, and few mature trees. Sodded areas cover marginal portions of land, or as the land strips between the curbs and the exterior envelopes of building adjacent to the right of way. The ratio of sodded areas to the rest of the developed surface is inadequate. Asphalt and concrete are the dominant ground cover feature in this environment.

Shrubs are used to fill in remaining spaces in existing buffers. Frequently, they are used in small quantities along the road frontage, at the perimeter of signs, and the development. Their scale is disproportionate in relation to their surrounding masses, and their height and volume barely delineate projects boundaries. Shrubs planted at the base of large signs fail to fulfill their purpose of providing a natural counterpoint to a man made article. There is no balance between a high, large ugly sign and a formless ground cover. In addition, shrubs in these areas often show a lack of maintenance as well as becoming a collecting point for road litter.

Trees are scarce features in the commercial areas of Brooks Corridor. It is ironic that further down Brooks Street there is a boulevard district with mature and well maintained urban trees. The transition from the boulevard district to the strip is abrupt, and the contrast between the two places does not fit the sequence of a
smooth visual hierarchy. The aesthetically appealing boulevard is unveiled immediately on the facelessness of Brooks corridor.

In most developed areas, trees are planted in an irregular pattern and have less variation in design and species. Most of trees are evergreen, and planting is not performed according to landscape standards. Existing trees occupy patches of vacant land at corners and sides of buildings or are scattered anywhere in the vicinity of the project. They are often seen as a backdrop in the view scape, and their repetitive shape and low density reduce the sense of unity and stability.

Although lush plantings and landscaping features improve the appearance of selected points along the corridor, the Southgate Mall for example, this does little to lend a sense of cohesiveness to that stretch of roadway. When viewed in its entirety, existing planting is insufficient and ineffectively used. It merely provides a poor visual buffer that shields the unappealing and harsh surroundings of the corridor, and it fails to increase the motorist ability to determine where one project ends and another begins (Figure 5, 6).

Parking and unbuilt space

Parking areas are directly adjacent to Brooks Street, and consume large expanses of land. 50 to 70% of the developed area is paved with concrete and asphalt. Parking lots are typically placed in front of buildings and developed in a
Figure 5. Landscaping on Brooks Street: Illustration 1.

Figure 6. Landscaping on Brooks Street: Illustration 2.
string pattern punctuated by curb cuts\(^7\). In busy commercial cluster areas, only parts of buildings can be seen over the top of cars. In individual development, parking lots often look empty or ‘‘.. bigger than they need .’’\(^8\)

In most parking lots, cars surround business establishment from every direction. They hide buildings architecture and diminish the original scenic beauty of the road. The high density of parking overwhelm the environment, and their presence reaches well beyond attracting a great number of cars. They generate a maze of driveways and attract a clutter of portable signs.

Driveways conditions are critical due to lack of improvement that increase their visual identification. Along Brooks Street, driveways are delineated with paint and curb cuts. This can be a poor identification at night and during severe weather conditions. Looking for a parking lot’s access point can be a stressful experience, and motorists may find it difficult to identify the approach and locations of driveways from a distance. Visitors in particular need to remain constantly alert to locate driveways.

The overwhelming sight of parking has not only an effect on the physical environment, but a psychological effect on motorists as well. As Howard Kunstler

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\(^8\)Ibid
said, "We feel depressed even looking at the scene sitting inside the car." In the words of Christopher Alexander, "High density exposed parking give a message to people that outdoor is not meant for them, that they should stay indoor in their own building, that social communion is no longer permitted" (Figure 7, 8).

**Building Design**

The design and location of buildings have great impact on the appearance of the Brooks Street Corridor. Development looks isolated on its own plot, and buildings can lack recognizable connection with their surroundings. The architectural edge of the street is unbound by a variety of set backs. There is little to a building’s location and its orientation to the street. Building mass and arrangements are dictated by the indoor activities housed within the building. Restaurants and fast-food chains are parallel and pushed-up closely to the road’s edge for convenience. Whereas service-oriented establishments, car dealerships, large retail stores, and banks locate further back from the road to allow greater parking areas.

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Figure 7. Parking on Brooks Street: Illustration 1.

Figure 8. Parking on Brooks Street: Illustration 2.
Architecture is confined to the single-self expression of the building. The only relationship many buildings have to one another is limited to their low uniform height. A low profile of building reinforces linearity and monotony of the strip rather than continuity and harmony with the built and natural environment. Design elements such as geometry, roof shape, facade materials, entrances, and fenestration ignore community architectural styles and local traditions. Rather, they recall the universal “franchise” style architecture (Figure 9, 10).

Pedestrian Amenities and Streetscape Improvements

Pedestrian amenities, bike lanes and bus stops are practically non-existent. Existing sidewalks are interrupted by frequent driveways, and usually incorporated within developments where parking lots are placed in the rear or at the side of buildings. The concrete and asphalt used to delineate walking areas adjoin the street shoulder only a few inches above street grade and little contrast is seen between adjacent public and private spaces. This type of improvement does not provide a strong visual separation between pedestrian space and through-traffic. More over it is difficult to distinguish the street edge, a critical element for both pedestrians and motorist safety.

Figure 9. Building design on Brooks street: Illustration 1.

Figure 10. Building design on Brooks Street: Illustration 2.
By any standards, most of the walkways on Brooks Street lack the identity and the quality of attractive pedestrian paths. They appear lost in the visual chaos of the roadway, and look often unused. Walkways are in full exposure to traffic, noise, hazard and pollution, and attract few pedestrians. In fact, walking appears as a low class activity in the corridor. Often the street is full with cars and empty of people.

The lack of attractive and safe pedestrian space robs street life from the Brooks Corridor. The absence of pedestrian activity affects visitors and resident alike in their image of this urban corridor. The environment is hostile to people and friendly to cars. This alone the welcoming character of the Brooks Street corridor (Figure 11. 12).

Functional Problems

**Traffic impact**

As a primary interstate corridor, Brooks Street is characterized by heavy traffic. It operates as a transportation conduit between two major city’s, Missoula and Hamilton, and as a driveway for commercial developments. The functional problems posed by the roadway relates to traffic safety and congestion caused by intensive development, poorly marked and inadequately spaced driveways,
Figure 11. Pedestrian amenities on Brooks Street: Illustration 1.

Figure 12. Pedestrian amenities on Brooks Street: Illustration 2.
inadequate turning lanes and inconsistent on site circulation facilities.

Traffic patterns relate to different land uses adjacent to the main road. Land uses such as drive-in windows, drive-in banks, fast-food restaurants, quick service food stores, gas stations, car-wash services, and other intensive retail commercial uses, that are very sensitive to increase in traffic volume, especially during peak hours.

The incoordination between parking lot locations and driveways access points have had an adverse impact on traffic service levels and public safety. Traffic and congestion generate higher levels of noise and pollution. This constitutes a nuisance on nearby uses, and has raised major concerns on the quality of services provided by businesses.

In addition, many business establishments have their parking lots in full view of the road with multiple access points. This immediately upsets the flow of traffic and may be a precursor of contact with people in the street environment. The street social activities disappear when the road becomes a separator rather an integrator of people.

The dominant activity of Brooks Street is traffic flow. The number of automobiles is proportional to buildings intensity where the Floor to Area Ratio (FAR) is higher than 2.0. Activities that provide comfort such as restaurant and

hotels are primarily affected by noise and pollution. The flat topography of the corridor coupled with the absence of screening measures, such as planting and berm, make it easy for pollution to travel from one area to another and allow undesirable noise levels to leak into developments.

Access

The conflict between public and private space is another major concern to the functional operation of Brooks. The conflict between the "Right to Travel" and the "Right of Access" is compromised by inadequate locations, spacing and size of driveways. Pedestrian and vehicular conflicts immediately occur where driveways meet existing sidewalks.

Roadway design, traffic speed, sight distances, grade and the traffic generating characteristics of adjacent land uses, are all variables that affect access in the corridor. However, driveways remain a major cause of the functional problems posed by the corridor. By their inherent design, driveways oppose the basic form of access control recommended by highway and street design standards.13

Business owners use driveways as a key elements to make the business

functions accessible, and increase their sales. Driveways design is governed by direct access patterns with less attention to a driveway impact on through-traffic, safety and efficiency of existing pedestrian movements.

**Planting and Microclimate**

Although, it is often difficult to distinguish between the functional and aesthetic characteristic of plants, landscaping on Brooks Street provides little functional or aesthetic role. Glare generated by headlights, intensive neon signs, and sun reflection from extensive pavement and reflective material is unobstructed by existing plantings.

Furthermore, the scarcity of trees is contributing to the decreased rates of absorption of incoming solar radiation. As a result, there is continuous increase in air temperature, and it is usually warmer in the corridor than in nearby parks and countryside. These conditions do not create a favorable microclimate essential to human comfort.

In addition, the lack of trees, expose the corridor to wind currents. The existing planting is inconsistent and inadequate, thus the trees do not direct or block breezes. This has a direct influence upon the temperature extremes, smells, and humidity than a person can comfortably tolerate.

Humidity affects the microclimate and human zones of comfort. The plants
species currently used in the corridor have insignificant foliage, hence there is little water added to the air. In warmer seasons, discomfort levels increase as the quantity of water supplied by trees and plants cannot compensate for dry atmosphere within the corridor.

Another element that affects human comfort is noise. It is greatly dependant on climatic factors that include wind direction, velocity, temperature and humidity. Since plants regulate climate, they are an important element in noise control. Their presence may not reduce noise directly, however their scarcity increases visual contact with noise sources which can psychologically irritate street users.

**Design Evaluation of Brooks Street Corridor**

Community Design Evaluation Approach: Sherwin Green Taxonomy

While it is difficult to effectuate aesthetic control through zoning and other regulatory processes, community design evaluation techniques are emerging as practice tools to promote functional and creative development. Community design

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is a recent discipline in rural and town planning. Prevalence of zoning leads to the unsightly assumption that community design is "nothing more than the arrangement of various architectural forms to suit land use regulations"¹⁶. Yet many professionals in the planning field contend the opposite and argue that community design has an important role in guiding development and enhancing the built environment of the community.

Although the field of community design is still evolving, there is a deficiency in terminology that explains design approaches and can be used by professionals, decision makers and citizens to evaluate, communicate, and share design ideas of development in the community.

The lack of clear design communication creates confusion between those having a vested interest in development outcome and design professionals. This leaves the first group mystified about why things are done instead of understanding how development can be accomplished.

Addressing this vacuum, Sherwin Green Taxonomy has been created for community design to establish a comprehensive framework for evaluating and communicating design issues between different group of practitioners, relators, developers, citizens and students. The taxonomy is proven to be reliable tool, and

for many groups are using it to evaluate and explain community design in existing and proposed development as well as in different research projects.\textsuperscript{17}

The taxonomy is based on four community design principles—Function, Order, Identity, and Appeal. These elements draw on environmental, sociological, and psychological dimensions. The taxonomy defines its origin and meaning to facilitate its use as guidelines to test the quality of community design projects and proposals. An evaluation guide is also used along with the taxonomy to place design quality responses in a context of time, people, and place (figure 13).

This approach is applied here in an attempt to evaluate quality of existing development in the Brooks Street Corridor. As stated by the author of the Taxonomy, the evaluation is formulated from field survey and analysis of existing conditions and through the synthesis of ideas using Taxonomy guidelines and its evaluation guide.

\textsuperscript{17}Principles used by the city of Fair Fax County. Virginia.
<table>
<thead>
<tr>
<th>Principles</th>
<th>Qualities</th>
<th>Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>FUNCTION</td>
<td>1. LINKAGE</td>
<td>Access/Interact/Overlap</td>
</tr>
<tr>
<td></td>
<td>2. SECURITY</td>
<td>Safety/Privacy/Activity</td>
</tr>
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<td></td>
<td>3. COMFORT</td>
<td>Physical Ease/Visual Rest/Friendliness</td>
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<td></td>
<td>4. DIVERSITY</td>
<td>Choice/Variation</td>
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<tr>
<td>ORDER</td>
<td>1. COHERENCE</td>
<td>Entrance/Edge/Landmark/Vista/Skyline/Groundline</td>
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<td></td>
<td>2. CLARITY</td>
<td>Structure/Articulation/Closure</td>
</tr>
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<td></td>
<td>3. CONTINUITY</td>
<td>System/Sequence/Rhythm</td>
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<td></td>
<td>4. BALANCE</td>
<td>Pattern/Emphasis</td>
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<tr>
<td>IDENTITY</td>
<td>1. FOCUS</td>
<td>Visual Focus/Activity Node</td>
</tr>
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<td></td>
<td>2. UNITY</td>
<td>Concept/Repetition</td>
</tr>
<tr>
<td></td>
<td>3. CHARACTER</td>
<td>Integrity/Simplicity/Restraint/Style</td>
</tr>
<tr>
<td></td>
<td>4. SPECIALNESS</td>
<td>Historical Quality/Symbolism/Singularity/View</td>
</tr>
<tr>
<td>APPEAL</td>
<td>1. SCALE</td>
<td>Human/Humanizing</td>
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<td></td>
<td>2. APPROPRIATENESS</td>
<td>Proportion/Authenticity/Familiarity</td>
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<td></td>
<td>3. VITALITY</td>
<td>Stimulus/Contrast/Tension/Movement/Sense of Humor</td>
</tr>
<tr>
<td></td>
<td>4. HARMONY</td>
<td>Light/Color/Texture/Line Sound/Smell</td>
</tr>
</tbody>
</table>

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Figure 13. Community design Principles, qualities, and guidelines.
Design Evaluation of Existing Development on Brooks Street

The field survey involved recording conditions in the different area of development along the corridor. To do this a base map of the Brooks corridor was readily prepared to identify the areas being surveyed. The base map was digitized from a current aerial photograph of the Brooks Street Corridor. The map shows the different areas of development between Mount Avenue and the Buck-house Bridge. Developments are identified by lot numbered from one to fifty. The shape of the lot is defined by the access road direction and the front edge of the highway.

During the evaluation phase elements that made-up the development were examined. This includes, streets edge treatments, landscaping, parking lots density and size, driveways, signs, pedestrian amenities, building designs, the skyline, and activities within the development.

The analysis consisted of looking at each component in the development and testing its functional and visual quality based on the guidelines provided in Sherwin’s Taxonomy. The results of the evaluation were used to create a map that rates qualities ranging from poor to acceptable to good (Figure 14).

A project with good design incorporates most of the principles of community design-Function, Order, Identity, and Appeal. An acceptable design is
Figure 14. Brooks Street & the Bitterroot Gateway design evaluation
a quality development where most its elements are functional enough to be used by a variety of users. Moreover, they have sufficient design components to give them some distinction and recognition. A development judged as having poor design qualities exhibits deficiencies in its ability to integrate to the aesthetic and functional values in the context of the built environment.

To demonstrate the application of this method, evaluation guides were filled out for three areas on the Brooks Street Corridor. These areas are identified as: The Wal-Mart development, the Motor Inn development, and the Minimart-Frontier pie development. These areas correspond respectively to lots 48, 38 and 36 on the map (Figure 15-17)

Relationship to Zoning Regulations and the Master Plan

Missoula has a two-decade old policy concerning commercial development. Both the Missoula Area Master Plan of 1975 and the 1990 Revised Master Plan recognized the importance of halting fragmented and strip development. Despite the policy, commercial development has continued along city’s major arterial.

The revised plan of 1990 recognized the detrimental impacts of arterial development on the environment. The revised plan says, “allowing the frontage of every arterial to be commercially developed can result in dependence on the automobile (which impacts air quality), a deteriorating physical environment,
Figure 15. Design evaluation lot 48: Wal-Mart development.
Figure 16. Design evaluation lot 38: Motor Inn development.
Figure 17. Design evaluation lot 36: Minimart-Frontier Pie development.
marginal business, increased service costs for local government, and adverse impacts on adjacent residential property”

In addition, the plan recognized the relationship between performance standards established during the zoning process and the character of development. The absence of an adequate relationship results in the development of dissatisfaction by the community and the developer. The changeable construction standards dissatisfy the community and the lengthened review process prevents the developer from knowing in a timely fashion the outcome of their development proposals.

The proposed policies in the revised plan call specifically to improve the function and the appearance of existing commercial strips through the following actions:

* Commercial strip areas should be limited and their development standards should be revised

* Zoning standards for commercial development should be based on performance, and should include a Floor Area Ratio (FAR)

* Commercial strip development within and leading to the community should have specific performance standards.

The current Zoning Ordinance adopted by both governmental bodies

18City of Missoula, Missoula Urban Master Plan 1990, (Missoula, Mt., Office of Planning and Grant (OPG). 1996), 41-44.
provides many standards for development in the city’s commercial districts. These standards incorporate the goals of the Comprehensive Plan policies to insure a higher quality of development in the city and its jurisdictional area. Permitted land uses, buildings heights, buildings set backs, loading and unloading space constitute the bulk of the standards. In addition, the Zoning Ordinance provides more stringent design standards for ancillary facilities such as parking, signs, and large commercial developments in enterprising commercial districts.

Although zoning standards help create homogenous commercial districts as well as helping to protect the health, safety and welfare of the public, it is important to note that as a result of these standards there is now a new form of development. Zoning has lead to a typically fragmented and a totally car-dependent development-type.¹⁹

The revised Comprehensive plan recognizes the impact of zoning activities on the character of commercial development. "Zoning activities has not successfully implemented the plan’s goals in a comprehensive manner. Instead, zoning has primarily taken place in response to individual requests and the vagaries of market demand, resulting in the fragmentation which the plan sought to

Both the Urban Comprehensive Plan and Zoning Ordinances are necessary planning tools to guide future development. Zoning constitutes a useful bank of regulations, and the Comprehensive Plan fosters visions for the community. Despite the importance of these documents, there is a gap between the regulations and their outcome. This gap is inherent to the difficulty most people have in envisioning what their community will look like after full implementation of zoning.

Zoning language does not articulate the concept of linkage in development. The standards guide how development function and integrate in their own plot of land, but ignore the comprehensive framework of relationship between other developments. On the other hand, the Comprehensive Plan is composed of aggregate figures and bubble diagrams that do not illustrate real streets, buildings positions and uses. This make it impossible to verify that projects utilizes an integrated approach.

Current zoning regulations govern community design. To build valuable and sound communities, design should integrate all developable parts of a

\(^{20}\)City of Missoula, Missoula Urban Master Plan 1990, (Missoula, Mt., Office of Planning and Grant (OPG), 1996). 41-44.

community. "A single part of a community should not be designed in isolation and out of context, just as the mechanical system of a building should not be designed apart from its structure or function. This confirms the importance of the urban design thesis that regulations should encompass the community-building lines rather than single house or an individual building lines.

Entryway Corridors:
The Experience of Other Communities

The Bozeman Entryway Corridor Overlay District Regulations

In 1990, the Bozeman City Commission adopted a new zoning ordinance known as the Bozeman Entryway Corridor District Regulations. The ordinance recognizes the importance of the visual attributes of city entryways corridors, and its regulations are designed to ensure a higher quality of development and change that occurs along city’s entryway corridors.

The ordinance establishes design criteria, standards and review procedures


23Ibid

24City of Bozeman, Bozeman Area Entryway Corridor Overlay District. (Bozeman, Mt., City of Bozeman, 1993), 354, 358.
for new development and the redevelopment of existing and future properties within predefined entryways corridors. Also, the intent of the ordinance is to stimulate citizen participation in design decisions made by the design review board and the agency implementing the ordinance.

The ordinance provisions apply to two type of entryway corridors, identified as Class I, and Class II. In the Class I, the regulations apply to whole or partial development within 600 feet from the centerline of highways entering the city. In the Class II, the regulations apply to whole or partial development within one city block or three hundred feet from the center line of other roadways entering the city. In both classes, the ordinance defines the geographic location, names, and boundaries of each corridors. The following are standards and objectives of the Bozeman Entryway Corridor Overlay District Regulations.

General Standards

1. Open space, off-street parking, and relevant amenities should be adequate in the development. In addition, all elements in the development should relate and integrate well to the natural setting and the built environment.

2. Development in any entryway corridor should be compatible with existing, and future land uses as well as with circulation patterns on nearby properties.

3. The development should comply with all applicable design standards, including
those identified in the Design Objectives Plan.

**Access Standards**

1. Access points in Class I corridors should be spaced no more than six hundred feet apart from each others. Access points in class II corridors should have a spacing of no more than three hundred feet.

2. Additional access points in existing developments are prohibited unless it can be demonstrated that the addition can be beneficial to the functional operation of the roadway.

3. The interpretation of access provisions in existing development should not harm continuous and reasonable access to other properties along the entryway corridors.

**Parking Standards**

1. Parking facilities should be located no less than fifty feet from the right of way in Class I corridors, and no less than twenty five feet in class II corridors. In addition, parking facilities should comply with all the requirements provided by the design requirements.

2. Unless specific requirements apply, parking lot landscaping should appear as part of the natural surrounding, and preserve natural views in the entryway corridor area.
Building Standards

1. Building set backs should be fifty feet from the entryway right-of-way in Class I corridors, and twenty five feet in Class II corridors.

2. Building design and material should be compatible with and integrate to the natural setting viewed as a backdrop from the entryways corridor.

Landscaping and Open Space Standards

1. Fifty feet of a landscaped open space should be maintained between the entryway right-of-way and parking or building areas in class I corridors. Twenty-five feet of similar open space should be preserved in Class II corridors.

2. All developments in any entryway corridor are subject to the landscaping standards of the zoning title.

Signage

1. Signage in any entryways corridor shall meet the requirement set forth in the signage ordinance of the zoning title, with possible deviations from specific requirement of the overlay or underlying zoning district and other applicable regulations.
Bozeman Design Objectives Plan

The Design Objectives Plan consists of design ideas that can be incorporated into the Entryway Corridor Regulations, and serve as a basis in design review procedures. The design ideas contained in the plan are clear and based on good sense, and extensive public involvement process. This makes the plan a broadly accepted document by the business community, city officials and citizens alike.

The Design Objectives Plan illustrates seven design objectives and fifteen design guidelines applicable to the city’s six entryway corridors and Interstate 90. Furthermore, these thoroughfares were evaluated and specific objectives and guidelines were articulated to each of them.

These guidelines are not intended to be fixed and rigid. But they allow flexibility in their implementation to help achieve a pleasing creative design and overall vision for the appearance and functioning of the entryway corridors. For this purpose, the guidelines emphasize on building design (varied building massing, pitched roofs, and strong entrances); site design (encouraging screening measure for parking to reduce their visual impact); signage (adequate size and height); and pedestrian access amenities.
Austin, Texas, and the Hill Country

Roadway Corridor Regulations

The intent of the Hill Country Regulations is to:

1. Maintain the existing natural beauty in the eastern edge of the Hill Country area
2. Encourage development that compliment the natural attributes of the area
3. To preserve a high quality of life that exists in harmony with nature
4. To promote safe and efficient traffic flow in Hill Country Roads and Highways
5. Preserve the scenic beauty of the area, as well as the scenic vistas from the road
6. To achieve planning goals that benefit Austin communities

Additional Site Development Regulations for Sites in a Hill Country Corridor:

Development in Hill Country Corridors are subject to the following regulations:

1. Floor-to-Area Ratios\(^{25}\) and heights of buildings are defined in relation to intensity zones rated as low, moderate and high. Each intensity zone is determined relative to the distance from the property to the right-of-way of a predefined corridor. For example, a high intensity zone encompasses an area within 1000 feet from the intersection of two state highways.

\(^{25}\)The Floor-to-Area Ratio in these regulations is the ratio of gross area (parking and atriums not included) to site area within the appropriate slope class in the Hill Country Corridor.
2. All non-residential buildings have a maximum Floor-to-Area-Ratio that is relative to slope gradients and intensity levels. For example, for a 0 to 15% slope, the maximum Floor-to-Area Ratio shall not exceed .25 in a low intensity zone, .30 in a moderate intensity zone and a ratio of .35 in a high intensity zone.

3. Construction of roadways and driveways is prohibited on slopes exceeding 15% unless such structures are necessary to provide access to flat areas. Parking areas and buildings utilizing Piers and beams techniques may locate on slopes over 15% if the following criteria are met:

   a. Preserve the existing topography with proper placement of cut and fills to blend exterior elements such as walls and terraces with the natural contours.

   b. Terracement and consolidation into the hill side are encouraged for structures that are located on down slopes over 15%. In such buildings, structural excavation should not exceed eight feet in depth, and any cut exposed areas should be screened with additional landscaping.

   c. Disturbance of hill sides vegetation is limited to the area necessary to locate the structure.

   d. In areas where terraces are not provided, 8' vegetated slopes of 3 to 1 ratio should be Restored from cut and fills. Terraces between slopes are
prohibited where more than an 8' slope is required

e. Development should comply with other slope regulations. In case of a conflict between regulations, the more stringent should apply

4. Height must be proportional in relation to the distance of development from the right-of-way. The maximum height is 28' within 200' from the right-of-way of any Hill Country Corridor. Beyond this distance, the height may increase for moderate and high intensity zones, to a maximum of 40' and 53' respectively.

5. All on-site utilities shall be located underground, unless otherwise required.

6. All buildings should use materials that are compatible with the Hill Country environment such as rock, stone, and wood. Materials having more than 20% reflectance, such as mirrored glass, are prohibited.

Performance Incentives for Sites in the Hill Country Roadway Corridor

To better promote the goals intended by the Hill Country regulations, the City Council of Hill Country recommends and approves bonuses for developments that achieve design standards that are higher than those required by the regulations. Development bonuses include larger Floor-to-Area Ratios, increase in building heights, and reductions in set-backs.

The approval of these bonuses relate to the following performances criteria:

1. Preserving views of scenic vistas or providing public observation points.
2. Utilizing other roadways other than the Hill Country corridor to limit in this high volume area.

3. By reducing the impervious cover in the development by 15% or more.

4. Increasing the set-backs and landscaping of more than half of the site or improving the natural areas.

5. Providing community facilities in residential areas.

6. Breaking up building outlines to reduce their overall mass.

7. Use of “pervious pavers”.

8. Creation of parcels of 300' of frontage through consolidation of small lots.


10. Exceeding city ordinance requirements for dedicating public facilities, such as right-of-way, fire, police, roadways, regional drainage facilities, and EMS sites.

11. Using of energy and water conservation methods to reduce consumption below city ordinance requirements.

12. Construction of buildings and parking facilities on sites with slopes less than 15% grade.

To qualify for bonuses, a development in Hill Country Corridor must comply with at least half of the criteria mentioned above. However, bonuses could be obtained under unusual circumstances. For example, a case could be made
citing undue hardship imposed either by the Hill Country Regulations or the cumulative effect of other land use codes due to a site characteristic such as topography. In addition, bonuses can be used for unique development that sets an example of excellence with architecture, site planning, or land use design.

Tri-County Regional Planning Commission (Lansing Michigan)

Driveway Standards for Corridors

Performances Standards

The construction and use of driveways should meet the following criteria:

1. In order to reduce interference with through traffic, driveway design should permit vehicles to turn and enter at a speed of 15 mph.

2. At least three queued vehicles can wait to enter, park, and exit to and from the site without using the street right-of-way or other portion of way that may interfere with street through-traffic.

3. Parking system should be consolidated to allow circulation between adjacent parcels.

4. Driveway entrances can be used by all type of vehicles

5. Driveway locations should not create interference between vehicle access, loading and unloading activities.
6. Driveway placement should not obstruct sight distances of exiting vehicles. 

Sight distances are established according to the following schedule.

<table>
<thead>
<tr>
<th>Highway Design Speed (Mph)</th>
<th>Sight Distances (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>200</td>
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<tr>
<td>35</td>
<td>225</td>
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<tr>
<td>40</td>
<td>275</td>
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<tr>
<td>45</td>
<td>325</td>
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<td>50</td>
<td>350</td>
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7. Driveway design should not create a conflict between entering and exiting vehicles.

8. Vehicle exiting and turning to the right of the driveway should not encroach on traffic in the second lane of the corridor.

Standards for Right-Turn Lanes and Tapers

Right-turn lanes and tapers will be required in the following situations:

1. Where anticipated right-turn movement reach or exceed a weekly average peak of 50 per hour.
2. Where such treatment can be officially documented as necessary for public safety and traffic decongestion.

Driveway Profile

1. Driveways should have a maximum grade of 1.5% for a minimum distance of 25' from the edge of the pavement. Beyond this distance, the grade should not exceed 8%. 2. For a curbed corridor with a sidewalk 10' or less from the edge of the pavement, the grade of the driveway shall be appropriate to meet the sidewalk elevation without exceeding the maximum grade specified in the precedent paragraph. The sidewalk should be either tilted or inclined to meet driveways grade requirement.

3. For an uncurbed corridor, the grade of the driveway should conform to the slope of the shoulder to the edge of the driveway approach.

4. Driveways that locate upgrade towards the corridor can only have a maximum grade of 1.5% for a distance of 100' from the edge of the pavement. Beyond this distance, the maximum grade can only be 40%, but the difference between grades should not exceed 3%.

5. Driveways having a grade change of 4% or more should provide 15' long vertical curves

6. In areas where sidewalks need to be inclined to meet driveway grade requirement, the inclination rate should not exceed 1' rise for a 24' run.
**Driveway Spacing**

Driveway spacing is determined according to the Highway operating speed based on averages of vehicle acceleration and deceleration rate and traffic safety considerations.

<table>
<thead>
<tr>
<th>Highway Speed Limit (Mph)</th>
<th>Minimum Spacing (feet)</th>
</tr>
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<tbody>
<tr>
<td>25</td>
<td>105</td>
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<tr>
<td>30</td>
<td>125</td>
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<td>35</td>
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<tr>
<td>45</td>
<td>230</td>
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<td>50</td>
<td>275</td>
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In situations where parcels cannot maintain required driveway spacing due to lack of sufficient frontage, the landowner(s) should consider one of the following options:

1. Obtain a variance from the zoning officer for a minimum spacing that cannot be greater than the next lowest classification specified in driveways spacing schedule. For example, a variance from a 185' spacing requirement on an
40 mph arterial would be 150' the standard for a 35 mph arterial.

2. Seek an agreement from adjacent landowner(s) to consolidate access’ through a common driveway. In this case, the driveway must comply with all the regulations, and the anticipated driveway volume will be the sum of the-trip generating rate of both land uses.

Bonus for Combining Access Points

Property owners who agree to combine access points can use development bonuses granted by the municipality. The bonuses allow for reduction in lots sizes, parcel frontages and number of parking spaces required up to 15%. However, certain standards such as site circulation and safety measures cannot be waived.

Number of Driveways Per Parcel

1. Only one driveway opening per site is allowed on any one or two abutting arterial.

2. Continuous sites with more than 300' frontage. and those with more than 600.3' can use additional driveways if such improvement is in the interest of good traffic circulation.

3. The use of a dual-service driveway is considered as one driveway access under the Try-County Corridor Regulations.
4. Only one pair of dual one-way driveways can be used for each 250' street frontage and a pair of one-way driveways is allowed per each street frontage.
CHAPTER 3
THE GATEWAY CONCEPT

Bitterroot Gateway Identified

One of the most frequently seen views of Missoula is from the place where the town meets the country at the Buckhouse Bridge on U.S. Highway 93. Traffic is heavy in both directions, and thousands of people view this scene daily. The clustering of commercial activities at the intersection of U.S. Highway 93 and Miller Creek Road established a new place referred to in this paper as The Bitterroot Gateway to Missoula. This area is defined as the entrance to the city when traveling north up from the Bitterroot Valley. The following landscape description evaluates the physical assets of this scene.

Landscape Description of the Bitterroot Gateway to Missoula

This chapter describes, maps, illustrates, and interprets The Bitterroot Gateway panorama. The study area is a rectangular in shape looking northeast from the middle of the highway at its junction with Miller Creek Road (Figure 18).
Figure 18. Landscape components at the Bitterroot gateway to Missoula in 1996
The map represents the immediate environment of the grouping of the landscape components in terms of their spatial configuration and relationship. The panorama is the topological manifestation of the landscape in three dimensions. The foreground is bounded on the west by Bitterroot Motors and a line of urban trees to the northeast. The background is formed principally by the mountains which constitute the north wall of the Missoula Valley. The landscape units in the background of the study area are shown as a panorama (Figure 19).

**Paved Areas**

**Highway**

U.S. Highway 93 is a very wide thoroughfare that bisects the view of the landscape into two distinct areas: A mixed-use area with integrated open space on the east, and a high commercial activity zone on the west. The highway has four lanes that handle traffic entering and leaving the city. However, the bicycle lanes on either side of the highway are often empty. The traffic lanes are separated with painted lines on the surface of the highway that is entirely asphalt paved and bordered by concrete curbs on both sides. The eastbound lane visually reinforces the alignment of sidewalks, railroad, and power lines.
Figure 19. The Bitteroot Gateway to Missoula before 1995
Streets

The streets in Bitterroot Gateway include the access street to Wal-Mart, and the peripheral street which circles Wal-Mart around the parking lot and building. The latter connects to the residential area on the north side of Wall-Mart and Miller Creek to the south. Both of these roads have low traffic volume, and the traffic lane separation and curbing is similar to the highway. The connector between the highway and Wall-Mart is short and crosses a railroad track. This may cause traffic jams during train crossing. Generally, these streets are only partially visible from the highway as they are hidden by landscape mounds bordering the Wal-Mart parking lot and railroad tracks. Due to this buffering, traffic activities are not fully exposed to viewer which in turn creates less visual impact on the view.

Bare Areas

Ditch

There is a six-foot deep ditch between the railroad and the sidewalk that has no ground cover. The bottom of the ditch is hidden from view due to its depth but the sloping sides are visible with little ground cover. If left in its current conditions, the ditch presents an ugly wound in the landscape and becomes an
eyesore for the viewer.

**Vegetated areas**

**Urban Trees**

A row of trees on the northeast side of the Wall-Mart screens the residential area beyond the highway. The tree height is above the roof line of the buildings. This results in the middle ground being hidden from the view.

**Sodded Areas**

The continuous strips along the sides near the highway are sodded. Much of parking lot of Wall-Mart is screened by the green sodded mounds. These green spaces soften the visual impact of harsh, barren materials, such as asphalt, concrete gravel ballast, and metal rails.

**Mountainsides**

**Prairie Mountainside**

Grassland slopes dominate the mountainsides facing the Bitterroot Gateway and contrast with the rest of landscape according to the change of seasons. They
vary from dark brown in the winter through bright green in the spring to golden yellow during summer and fall. These beautiful prairie mountainsides are a stunning feature that attract the eye at first sight, set a sense of focus in the panorama, and establishes a regional identity for the Bitterroot Gateway.

**Forested Mountainside**

This vegetational type is apparent only in the canyons of the mountains. The tree cover, combined with clear-cuts and elevated mountain heights make them an appealing and vital part of the landscape as they provide contrast, color, and a refreshing psychological effect.

**Commercial Areas**

**Discount Department Store**

The new Wal-Mart store is on the east side of the highway. It has one story and covers a large area. The front facade is half the length of the parking lot and runs parallel to it. The parking facility is a rectangular lot approximately 1000' by 300' wide divided with three landscaped island that run perpendicular to the store. Because the width of the parking lot, the Wal-Mart building sit a good distance away from the highway.
The low profile of the building repeats the horizontal nature of the foreground and does not obscure the background mountains. The architecture is a contemporary style utilizing acceptable materials such as red brick and white stucco that integrate with natural surroundings and the homes built on neighboring foothills. In addition to the materials, architectural aspects such as, the pitched roof of the front towers give the building a sense of identity, and provide a refreshing relief from the dulness of common flat-boxy commercial buildings.

Gas station

This new project occupies the northwest lot at the intersection of U.S. highway 93 and Miller Creek road. Its Clock tower is an attractive feature tying the east and south boundaries of the lot and directs motorists view towards the minimart entrance housed in the main building. The project has a narrow driveway that directly connects the parking lot to the highway. This access point is marked with curb cuts, and it is at close distance from the street light. These conditions make the development location unsuitable for highway traffic.

Apple Bee's Restaurant

Located on the northwest side of the Highway and bounded on the south by the new gas station. This development is confined to a small lot where the
proportion of site elements are in general kept to an acceptable ratio. The building set back and its height extend the view from the highway beyond the roof line, and parking do not dominate the view due to their low density and a sufficient green open space surrounding them.

The building character recalls local style of commercial brick building found in the downtown area. However, the building vocation is quickly confiscated by a tall and large sign that dominates the site to announce the activity housed in the building.

Auto Dealership

Bitterroot Motors is the another major commercial area in the visible panorama. It is located on the northwest side of the highway at the intersection with 39th Street and U.S. Highway 93. Two large commercial signs announce the sales lot, and mark the end of the scenic Bitterroot panorama and the beginning of Missoula’s strip development.

Clutter of Billboards & signs

The clutter of commercial and traffic signs northwest and beyond Bitterroot Motors is characteristic of commercial strip development all over America. These constitute a major portion of the unsightly view motorists experience as they
proceed from the Bitterroot Gateway toward the city center.

Power lines

Running parallel on the west side of the railroad, power lines are equally spaced and carried on high wooden poles. Their height gives a sense of scale to the elements of the view scape. Their closeness and frequency creates a velocity sensation and exacerbates the sense of speed, but their number and frequency clutter the sky of the panorama.

Traffic Signs

There are few traffic signs in the foreground. All signs are small in size and mounted on metal poles at a rather low height. They are located on both sides of the highway, but do not appreciably obstruct the view.

Visual and Functional

Characteristics of the Bitterroot Gateway

In this panorama, the highway is the first component which has significant impact on the viewer. The view of the highway itself is rather bulky and static when looking from sidewalks and adjacent areas. Yet the view from the road of the panoramic landscape is an enjoyable visual experience. It creates a dynamic
impression on the driver and it’s passenger\textsuperscript{26}.

In addition, U.S. Highway 93 is adjacent to distinct landscape units such as the railroad, and the sidewalk that run parallel to it. The railroad tracks are isolated from the bulk of the transportation activities in the area, and are devoid of activity most of the time. The exposure of their ballast and metal rails to the view from the highway detracts the expression of a vital urban gateway.

The spatial configuration and juxtaposition of these components on a flat surface creates a wide long band physically separating developments on east and west of the highway. Beside highway traffic and on site car movement, developments appear functionally remote from each other. In addition, High traffic activity in the highway make access difficult between one area and another. In this circumstances, the Bitterroot gateway as an entrance to the city is experienced more through apparent visual attributes than by integrated functions and activities.

Functionally, The Wal-Mart store grasps the attention as a dominant commercial node, however, it is the appearance of the building and its surrounding which marks in great part the entrance to the city. The building setback permits motorists to have long views from the highway towards the mountainsides through a vertical, stratified visual relationship. First the building is seen as the highest

\textsuperscript{26}Kevin Lynch, \textit{The View From The Road} (Cambridge: Harvard University Press, 1964), 13.
component, then the sodded mounds, light poles, trees the parking lot, and finally the streets with the outlying hills and the forested high mountain top as a back drop for the entire scene.

East and west of Wal-Mart two high access roads cross U.S. Highway 93. These are a third component that define the geometry of the gateway, its pattern of major activities, and contribute to enormous traffic volume of the highway. Their connection to the highway is visible only from a close distance. This diminishes the sense of orientation, and provides a direct physical correspondence between residential and commercial areas.

Landscaping around the Wal-Mart create a visual unity and balance man made and natural features. Newly planted trees along the sidewalk are still in their early stages of growth, but already they establish a feeling of continuity in the landscape. Existing mature trees screen residential areas, and integrate the foreground, the middle ground and the background of the gateway panorama.

Opposite the Wal-Mart all the new gateway projects are accessible directly from the highway. The new gas station marks visually the city entrance. The clock tower with its modest height is a unique physical landmark in the entire corridor. It provides orientation to motorists and increases the clarity and legibility of the view scape.

Finally, the utility line's function is independent from land use activities in
the Bitterroot Gateway. Along with traffic signs, they break up the flat topography of the area and set a physical scale in the panorama: The linearity of the highway is repeated in perspective through the decreasing height and spacing of the wooden poles as the viewer proceeds towards the strip.

Development in the Bitterroot Gateway adds to the visual quality of the built environment and enhances the legibility and identity of Missoula entrance (Figure 20). In terms of linkages, the width of the highway immediately creates a physical barrier. Its disconnects pedestrian movement on sidewalks lining the roadway. This conditions isolates walking activities rather than integrating them within the rest of developments.

Activities on both sides of the highway should be linked together to create a homogenous functioning entity. A walking scheme can be developed to link all projects in the area without using the car to move from one development to another. People can walk in the Wall-Mart Parking lot, shop, and go to restaurants in the same area. This can reduces vehicles trips, and encourage outdoor activities in the Bitterroot Gateway.
Figure 20. The Bitterroot Gateway to Missoula 1996
CHAPTER 4
DESIGN OBJECTIVES FOR DEVELOPMENT

Design Objectives Applicable to All Missoula's Entryway Corridors

Quality of Design and Local Architecture Styles

Many of the commercial buildings in the Missoula Entryways Corridors lack craftsmanship in their design, appearing utilitarian and boxy. The concentration of this kind of developments along city’s arterial diminishes the city’s aesthetic characteristics, impoverishes the city’s touristic attributes, and disconnects the community from its regional identity.

Where many recent developments have incorporated good design qualities, the strip developments still have repetitive and substandard qualities that ignore local traditional and architectural styles. This problem cannot be solved over night, however, continuous improvement by planners and developers of the city’s image will lead to enlightened development in the future. Indeed, this will secure a higher quality of life in the community and support future economic prosperity.
**Historic Preservation**

Often, development in Entryway Corridors consist of new construction and additions on tracts of land containing fragments of the community’s past. These reminiscences of the past are not necessarily old buildings or structures, but can simply be a place known by its name or established ecosystem. Careful modification of certain site elements is important in preserving viable links to the community past, and sustain its sense of place.

In the case of old buildings and structures that display firmness and delight it becomes more than meaningful when they are integrated into the everyday landscape. There are many reasons to pursue historic preservation. Historic structures can be upgraded and modified to serve a different purpose than their original design, while showing individuality and identity of a distant time and a place.

**Cityscape**

Missoula rural character contains many natural attributes, and future development in Missoula entryways should reflect the natural environment. Past development in these areas has been unresponsive to natural form. The process of development has erased many important natural features that orient viewers and clue them into the landscape.
As a substitute for the natural landscape, a developer should create a cityscape in harmony with nature. All of the entryways components need to be conceived as entities that extend and amplify the natural environment. This can create a system of harmony which generates creative power in the land, and which in return transmits a life-giving power to place and its people.

**Building Massing**

Fragmentation of development in commercial corridors result from inconsistent building set backs, and an uncoordinated variety of location and orientation. In addition to the weak street architectural edge along city ‘s corridors, disproportionate and bulky masses of buildings create a non-unified city form.

A traditional principals in building masses not found in Missoula’s entryways is the location of buildings close to one another as well as placing buildings close to the street. Building masses should be broken up with a variety of roof shapes, volumes, heights and recesses. This approach creates fewer gaps in the built environment where parking can be screened with building mass, and the street edge can be continuous to create a uniform and attractive visual envelope as well as a rich urban view-scape.

To emulate such principles, developments could be consolidated to create
proportional masses with various sizes and consistent orientation. For example, a larger building volume should be grouped in small connected masses which enclose driveways and pedestrians space, as a result building set-backs could vary without exceeding the threshold of consistency.

**Impact of the Automobile**

Like in any commercial strip, the chaos affecting the built environment is one price of the dominance of the automobile\(^{27}\). In particular, the new form of development along the entryways corridor has been measured on car scale. AUTO circulation and storage space for parking consume large amounts of land. With the absence of screening measures, the car is immediately seen as the dominant element in the landscape.

Customer accommodation requires adequate access, parking, and exits. However, under no circumstances should these element govern site design. These elements are necessary features, but their dominance cannot undermine other important aspects of site planning. It is important to incorporate other site design principles to balance the needs of the automobile with the needs of other users.

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Pedestrian Space

Despite the use of the car, on-site pedestrian activities still require accommodations. “Very few developments have recognized that once people park their cars, they are immediately pedestrian”\(^\text{28}\). Walking activity is measured on a human scale versus the car scale. So, it is important that pedestrian routes are safe, convenient, and inviting.

The physical aspects of the routes of travel need to be thought of in terms of comfort and visible characteristics. “People feel much more comfortable with their surroundings when there is a variety of choices available to them: Things to see, things to do, people to interact with”\(^\text{29}\). For this purpose, site design should include features that encourage an attractive pedestrian-oriented environment. Landscaping with seasonal colors, seating, walkways decoration, and windows along the pathways are among the elements that embellish the site and make it “A destination rather than simply a collection of parking”\(^\text{30}\).

\(^{28}\)Mark Hinshaw, Hough Beck, Design Objectives Plan (Bozeman, Mt: City of Bozeman, 1991, 10.

\(^{29}\)Ibid

Open Space

Celebration of events and outdoor activities in public open spaces, such as out-to-lunch, and the farmers market have shaped in many ways Missoula's community life. People enjoy using these spaces for summer concerts, arts festivals, seasonal displays, etc. Furthermore, these places have become urban icons for social communion and people interaction.

Commercial developments should consider opportunities to provide public open spaces that support a variety of outdoor activities throughout the seasons. Such spaces, can be simple hard surfaces, furnished with permanent outdoor seating, lights, and trees for sunny and shaded areas. These spaces can be placed near building entrances where people can use them to meet their friends, eat their lunch, or simply relax in or read a book.

Landscaping and Seasonal Colors

Mountains and vegetation defines the regional identity of Missoula. People in this area are aware of and appreciate the sceneries of the natural landscape. Similarly, vegetational plantings in developments play an important role in preserving these attributes. Moreover such features add to the form and character of the community's environment.

Landscaping softens the drab surrounding of buildings and pavement. It
prevents dust pollution, furnishes soil moisture, and maintains favorable conditions in the ecosystems that support urban wildlife, such as birds, bees, squirrels, etc. Other planting features such as flowers can be used to celebrate the change of the seasons, embellish the view of the built environment with natural colors, provide visitors, and residents with lasting positive impression of the community.

**Signs Design**

Signs perform a useful function if designed properly. Adequate signage in the entryways corridor will facilitate the transition between walking and driving, orient users, and provide them with information on products, services and presence of businesses.

The design of signs depends on many criteria that are not fully addressed by the current local regulations. The current codes addresses the location, size, and number of signs that can be used in commercial developments. These factors do not provide enough guidance for signs integration with nearby uses, and sign relationship to natural environment, views, residential areas, and pedestrian activities.

The appearance of signs along Missoula’s entryways translates the cumulative effect of poor design. Their configurations detract from the scenic beauty of the road, and further, lessen the effectiveness of other signs with their
aggressive advertising. Thus, attention in sign design should combine high graphic design quality with integration to site and buildings design.
CHAPTER 5
STANDARDS AND DESIGN GUIDELINES
APPLICABLE TO MISSOULA’S ENTRYWAYS CORRIDOR

The following guidelines and their illustrations were compiled in great part from The Bozeman design Objective Plan. The language and format of each guideline were modified from the original source to respond to local problems of design in development along Missoula Entryways Corridor.

Site Development

Guideline 1

Intent: Reduce the harsh effects of pavement and buildings with vegetation and landscaping

Standard: Provide irrigated landscaped islands in parking lot of more than 10 parking spaces. The internal landscaped areas should be at least 10% of the total area of the parking lot, and should have a significant effect (One major tree and ground cover) (figure 21, 22).
Figure 21. Site development: Example 1.

Figure 22. Site development: Example 2.
Guideline 2

**Intent:** Create attractive, safe and convenient pedestrian environments inside each development.

**Standard:** At least one pedestrian pathway should be provided in any development. The pedestrian route should be enhanced with trees and plantings, and clearly designated by having a raised surface. The route of travel should connect the street, the parking lot, and building entrances. Moreover, walkways areas should be marked with scored concrete or pavers at vehicular crossing. (Figure 23).

Guideline 3

**Intent:** Create a lively public space that enhances the enjoyment of outdoor activities during good weather.

**Standard:** Large commercial developments of 7,500 sf. or more as well as restaurant of any size, should be surrounded with an outdoor space that support a variety of activities. Such spaces should be a hard surface which has both sunny and shaded areas, and contains permanent or moveable seating, outdoor tables, new-paper stands, information displays, and additional food vending stands (Figure 24).
Figure 23. Site development: Example 3.

Figure 24. Site development: Example 4.
Guideline 4

Intent: Enhance the character of the area at night with adequate lighting that does not generate glare and excess light on adjacent properties.

Standard: Exterior lighting should be color-corrected and light fixtures should be screened with shields or covers to prevent glare and spillage of light on nearby properties. Light fixtures should be integrated with building and site design. Reduce intensity levels of individual light fixtures with the use of light poles that range from 12' to 18'. Incandescent lighting should be encouraged in small pedestrian areas (Figure 25).

Guideline 5

Intent: Preserve and maintain mature trees that have significant visible and functional characteristics within the entryway corridor.

Standard: Existing mature and healthy trees of 6" or more diameter, and clusters of vegetation should be preserved and integrated into new development site design (Figure 26).
Figure 25. Site development: Example 5.

Figure 26. Site development: Example 6.
Building Design

Guideline 1

**Intent:** Break down building masses to create variety of shape and forms

**Standards:** Avoid the use of long, flat facades of more than 100'. Encourage the use of angular forms, off-sets, and other features to provide interesting building shapes (Figure 27,28).

Guideline 2

**Intent:** create “Human” buildings with distinct entrances.

**Standards:** Building entrances should be announced with design elements, and architectural details such as canopies, overhangs, arcades, larger door openings, display windows, tile works, molding, and distinctive door pulls (Figure 29).

Guideline 3

**Intent:** Create organized development.

**Standards:** Building within multi-building complex should show unity in design. This can be achieved through the use of similar roof lines, materials, fenestration, sign location and details (Figure 30).
Figure 27. Building design: Example 1.

Figure 28. Building design: Example 2.
Figure 29. Building design: Example 3.

Figure 30. Building design: Example 4.
Guideline 4

Intent: Enhance the street scape with the display of goods and services to passerby.

Standards: All the visible sides of a building should present interesting details and material. Special attention should be given to the visual impact of a building’s back side on neighboring properties. Buildings and restaurant facing pedestrian street should incorporate window and display cases in their facades (Figure 31).

Guideline 5

Intent: Reduce clutter visual impact.

Standard: Mechanical equipment should be shielded from the view. Roof top equipments integrated into the roof form, and ground mounted equipment should be screened with attractive walls or landscaping (Figure 32).

Guideline 6

Intent: Encourage excellence in building design through the use of special features.

Standard: All new or renovated buildings should be encouraged to:

* Use recessed windows with highly visible sills. Keep rhythmic spacing with
Figure 31. Building design: Example 5.

Figure 32. Building Design: Example 6.
windows made of columns, thick mullions, or other facade materials.

* Accentuate building main entrances with larger doors and framing elements such as deep, overhang recesses, attractive roof shapes, porches, arches or arcades.

* Use natural materials that reflect permanence, such as stone, masonry, beveled wood siding, and avoid whenever possible synthetic, reflective, and flimsy materials.

* Use of seamed metal roofs or wood shakes/shingles roof material

* Incorporate overhanging eaves in roof design

* Minimize the use of flat concrete, concrete blocks, and stucco (dryvit) in building facades. Accentuate exterior envelope appearances with protrude recessed bands of accent colors, belt courses, wide reveals or other combinations (Figure 33,35).

Signs

Guideline 1

**Intent:** Discourage the dominance of signs on each others for an overall coordination in their locations, size, color, and lighting.

**Standards:** Signs should be thought of as integrative elements of the site and the
Figure 33. Building Design: Example 7.

Figure 34. Building Design: Example 8.
architectural design of building. Signs should use a unified graphic design approach that creates less contrast and visual distraction between signs, and does not reduce their overall effectiveness (Figure 35, 36).

Guideline 2

**Intent:** Encourage a well designed signage system that exhibits qualities in styles, and compatibility with the built and the natural environment

**Standards:** All the following factors should be considered during the evaluation and review of sign proposals in all entryway corridors:

* Compatibility in style, size, shape, and graphic design with other signs
* Type of materials used in the sign in terms of their durability and permanence.
* Quality and intensity of light produced by the sign, and its immediate impact on nearby uses and adjacent signs.
* Visual obstruction of mountains and other important views.
* Clutter impact on other signs or on the property.
* Graphic design quality of proposed sign.
Figure 35. Signs Design: Example 1.

Figure 36. Signs design: Example 2.
CHAPTER 6
SUMMARY

This paper focused on the image of surrounding environment projected at Missoula entrances. The image consists of man-made and natural components which the function and appearance shape visitors and residents impression. The study of these characteristics along Brooks street and the Bitterroot Gateway identified problems in development which were grouped in two categories: visual and functional.

Visual problems relate to physical appearance of roadway components which the image does not fit in the whole or distract from natural attributes. Functional problems are created by spatial arrangement of roadway components and the operation of the road itself. This is typical to all Missoula entryway corridors. The main roads operate as major highway, and serve as a driveway for commercial activities.

Visual and functional problems have an equal impact on Missoula’s urban identity, and are caused in great part by lack of integrative design. Visually, roadway components lack local craftsmanship in their appearance, and often do
not exist as an end in themselves. Functionally, the tendency to provide for instance, single access points and parking for each development is devastating to the organization and rationalization of traffic; two important aspects that encourage pedestrian activities and boost street life.

Although, it was not the purpose of this paper to delve into the depth of the philosophical meaning of design, the visual and functional qualities of the entryway corridors are measured by the effect of their good or bad design. Both qualities are important. They influence people’s aesthetic sensibilities, such as the pleasure or irritation they experience by looking at city’s entrances.

Moreover, quality of design impacts further on important factors in people’s life, such as mental health, morality, intellectual advance, or even personal happiness. This in fact explains, for instance, why the design of street lamps and their relation to trees or the profiles of corner buildings can affect the quality of city life, or why commercial signs found along the entryways corridor exhibit such a vulgarizing effect to a daily life to which they reasonably belong.

Missoula’s zoning regulations have failed to achieve the community’s urban aesthetic goals by overlooking such important aspects. Decades of zoning implementation have widened the gap between urban growth and the increasing need for visual and functional order, both justifiable motives that can contribute to a pleasant brightening of the community’s surrounding.
In communities faced with similar problems, planners are using corridor-specific plans and special land use controls to improve the overall communities appearance and to maintain the function and adequate operation of roadways and streets. In addition, researchers have come up with new approaches to guide development. As discussed earlier, Professor Sherwin Green’s design evaluation method was developed to evaluate design qualities in development proposals. It explains community design principles in a way that encourages participants of all backgrounds to use it.

In the absence of specific design guidelines for development in Missoula, this method can be used by the city design review board. It can be used as a zoning supplement to help developers, design professionals, and community members communicating design ideas and evaluating development quality during the planning processes.

In more specific areas, such as in urban corridor analysis, planners have focused their efforts on rethinking and redefining roadways function and appearance. The roadway corridor is no longer thought as simply a transportation conduit, or a track for motorists. Current thinking is shifting towards ideals that meet with Raymond Spurrier’s following contention: "an all-embracing, all-penetrating network that, together with the vehicles on it, the signs, the bridges, the
roadside ancillaries, is an integral part of our life and landscape” 31

Such thinking sets the path the path of a new era in community planning. Moreover, pressure from increased rezoning requests, increased preponderance of development activities along city arterials, increased obstruction of scenic views, and increased intolerable traffic activities are triggering demand all across the nation for a more aesthetically pleasing and operational roadside development.

Recently, many communities have decided to do something about the visual blight and functional obsolescence characterizing their major city corridors. Bozeman, Montana; Hill County, Texas; and Lansing, Michigan are among the few that have undertaken corridor improvement efforts. From design objective plans to overlay district ordinances, efforts dealt with a common problem of development quality along the entryways corridors. The originality of these efforts is in the nature of the adopted strategies. Communities are responding to unique problems in a local context.

In Missoula, new commercial development have been located near the intersection of U.S. Highway 93 and Miller Creek road. A pricipal goal of planners was to establish a gateway concept that introduces the city and defines “a sense of arrival to a place”. Indeed, the cluster of commercial activities housed in the Wal-Mart store, the Apple Bee’s restaurant, and the new gas/minimart station

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capture the attention of passerbys with their building design, landscaping and relatively low signs. However, one major problem remains. The journey and destination of car-born shoppers are still connected only through the parking lots.

In sum, The quality of development along Missoula entryways served as a means to evaluate the result of current and past land use practices. The linear development patterns of the entryways emerge as a new city form in small towns. It is a result of well established land use regulations and other socio-economical and political forces. In this sense, development patterns are difficult to reverse. However, the quality of development can be improved by claiming back functional and visual order qualities equal to those that characterize traditional city form, such as the downtown area.

The guidelines in this paper emphasized these objectives and are based on realizable ideas. They are flexible enough to allow considerable scope for experimentation in design by architects and private builders. With clarity of direction and public input, they can be used as rules of choice to achieve Missoula's aesthetic salvation.
SELECTED BIBLIOGRAPHY


