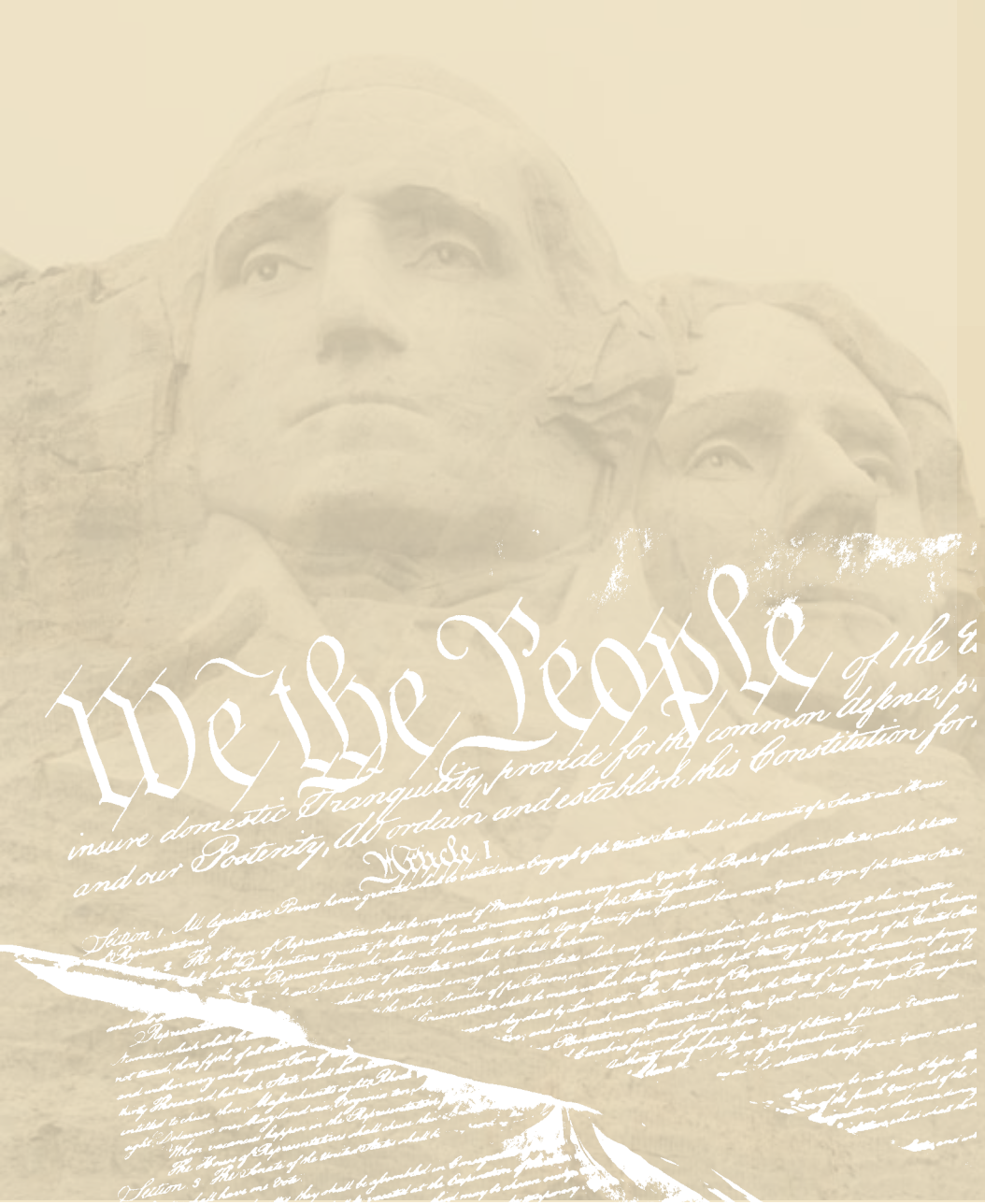

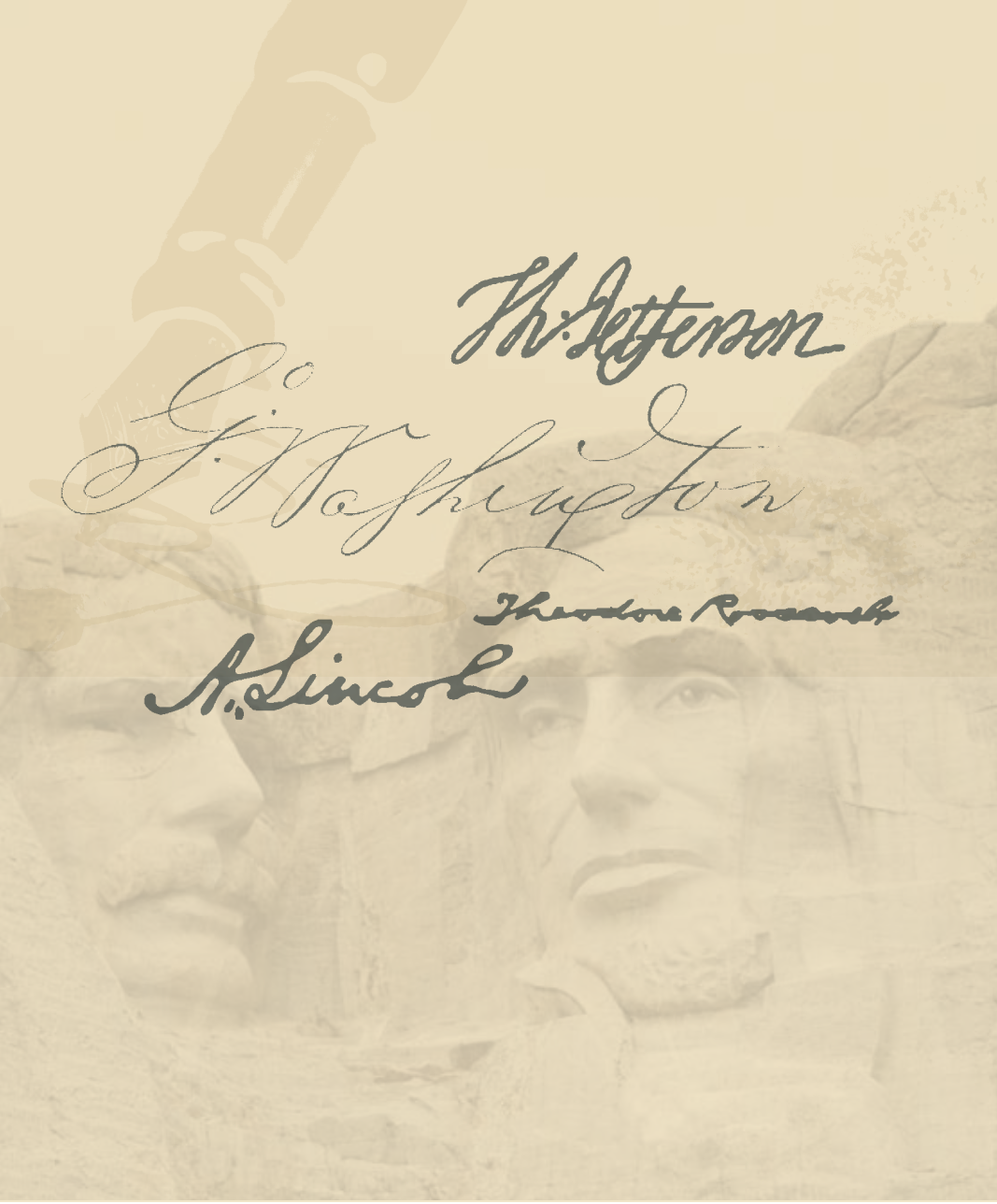

MOUNT RUSHMORE ROAD CORRIDOR DEVELOPMENT PLAN

Prepared by
RDG Planning & Design
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Final - June 2010

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Table of Contents

The Mt. Rushmore Road Corridor Development Plan: An Introduction

Mt. Rushmore Road (US Highway 16) is the traditional route connecting Rapid City to Mt. Rushmore National Memorial. Combined with the Interstate 190 spur, this corridor leads travelers directly from Interstate 90 to the Black Hills region via Downtown Rapid City, and remains a key business and service district for both residents and tourists. Maintaining Mt. Rushmore Road as a strong and viable economic district is clearly important to businesses, adjacent neighborhoods, and the entire Rapid City community. Yet changes in the development, transportation, and economic environments require careful consideration of the image, function, and potential of this important streets and its setting. Some of these changes include:

- Completion of the Elk Vale Road/Catron Boulevard loop, providing an alternative, limited access connection between I-90 and US Highway 16 South around the southeast edge of the city.
- Intensive new commercial development along the I-90 corridor.
- Increased awareness of street design issues by users and expectations by visitors that the regional experience should begin with gateway corridors.
- Continuing evolution in the commercial environment that places local businesses and independent motels at a competitive disadvantage relative to motel/hotel chains and nationally-branded retailers.
- Land use pressures on residential properties along the street, resulting in conversion or redevelopment to other uses and deterioration of housing conditions in some places.
- Emerging new opportunities such as medical and health related development related to Rapid City Regional Hospital.
- Functional obsolescence or conflicts created by aspects of current street configuration, including pedestrian access, friction between through and local traffic, and conflicting turning movements.

The Mt. Rushmore Road Corridor Development Plan presents a community-based program, initiated by the city and stakeholders, to re-imagine this important environment and consider its potential as an important asset well into the future.

WHY THIS PLAN?

Streets have multiple, complex functions. They are fundamentally transportation facilities that should help their diverse users reach their destinations safely and efficiently. But they are also major public spaces that affect the visual and experiential quality of a city, and economic lifelines for adjacent businesses. Streets also can have unintended negative consequences, such as becoming barriers that reduce access for some users or generating noise and traffic impacts that lower surrounding property values.

In the past, Mt. Rushmore Road, as the major arterial between the city and its unique countryside, has been an opportunity corridor. Its future can be equally compelling if it provides a high quality urban environment that integrates the transportation, development, visual, and neighborhood contexts. This plan is a guide to realizing that potential.

THE STUDY AREA

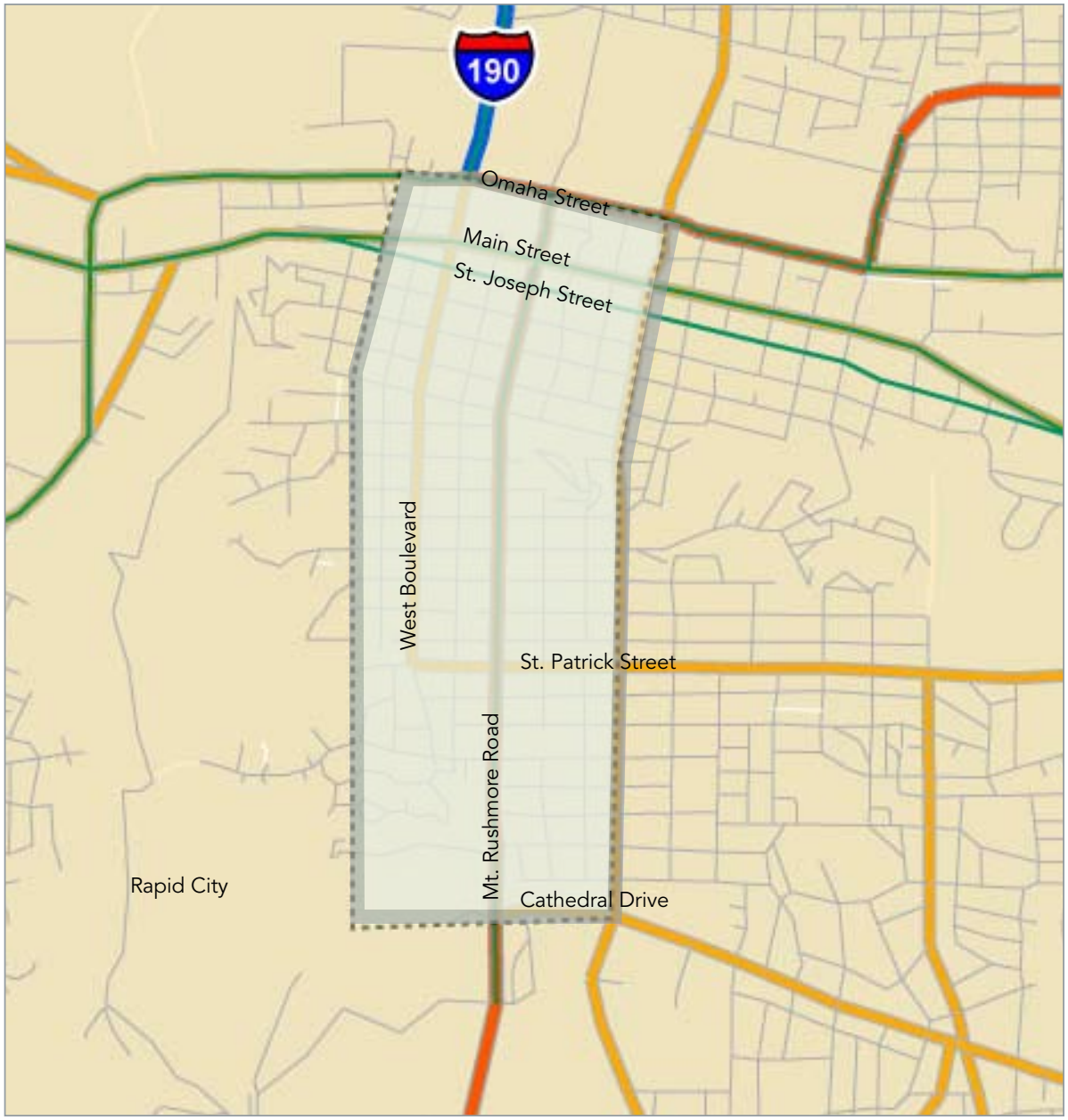
Map 1.1 identifies the project study area within the context of the Rapid City. The study area recognizes the relationship between Mt. Rushmore Road and its surrounding neighborhoods by extending four blocks on either side of the corridor from Omaha Street to Tower Road, incorporating most of the West Boulevard Historic District. The plan considers both the function and character of the main corridor and its effects on the health and quality its environs.

THE STRUCTURE OF THE PLAN

The Mt. Rushmore Road Corridor Development Plan is divided into four parts:

- **Part One** presents the plan's overall approach and describes a process that invited the involvement of community members.
- **Part Two** describes the existing conditions and contexts of Mt. Rushmore Road, fundamental to developing an appropriate plan for the corridor's future.
- **Part Three** presents a unifying vision and development framework for the corridor and surrounding areas.
- **Part Four** describes techniques for implementing the plan's concepts and recommendations.

Map 1.2: Study Area Detail



Source: Rapid City, RDG Planning & Design, 2008

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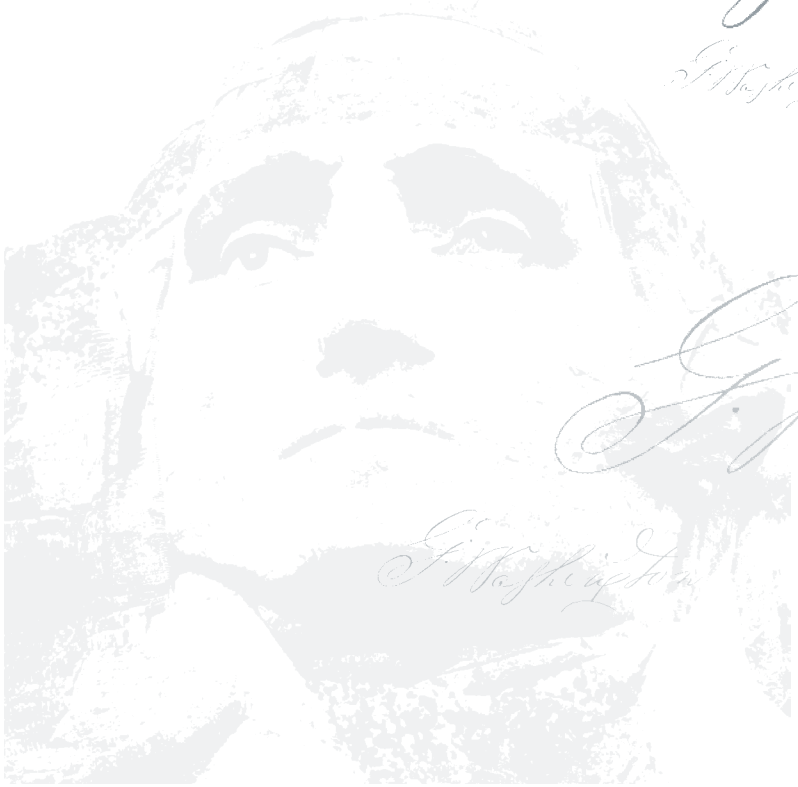


CHAPTER 1

The Planning Process

The Mt. Rushmore Road Corridor Development Plan involved stakeholders in framing the goals and directions of the Plan. This chapter includes a discussion of the plan's approach and a review of the planning process.

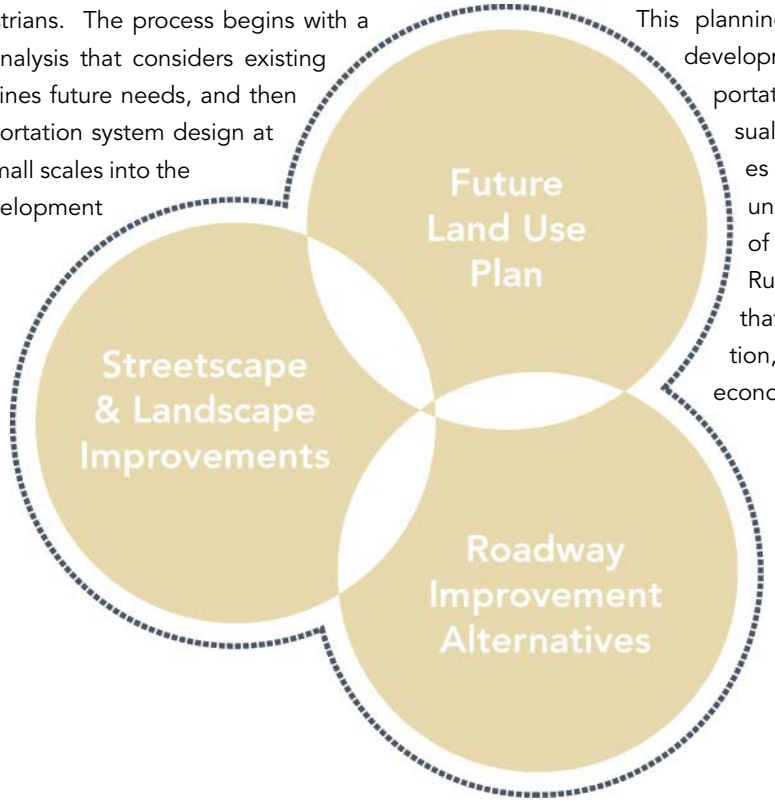
Planning Approach

The Mt. Rushmore Road Corridor Development Plan is based on the premise that an economically healthy, efficient, and visually appealing corridor will benefit the entire Rapid City community. Within the last five years, this major community street has experienced both new investment and deterioration, and its tourist-oriented businesses are experiencing growing competition from other districts. This plan recommends development concepts and public actions that, over time, will create more attractive commercial and residential environments for current and prospective residents and businesses. This is achieved by integrating three major components of the study area environment: **Land Use, Roadway Improvements, and Streetscape and Landscape.**

Future Land Use. Mt. Rushmore Road serves a variety of adjacent land uses and reflects varied character through its length. Land uses along the street and in the surrounding study area were evaluated based on markets and established City goals. Future land uses will probably not change dramatically from past patterns – commercial and mixed use development along most of the street and residential uses in surrounding areas. However, change will be most controversial and critical at the boundaries where these uses meet. Issues such as lot depth, buffering, and building form and siting determine both the quality of a development and its ability to fit into its neighborhood environment. For example, shallow lots along Mt. Rushmore Road may discourage desirable uses and limits landscaping and site enhancements. Successfully managing the transitions between higher and lower intensity uses can help the busy commercial corridor co-exist with its distinctive, adjacent historic district. Finally, the relationship of buildings to the street helps determine the quality of the corridor's environment.

Roadway Improvement Alternatives. Mt. Rushmore Road as a transportation facility should serve all modes effectively, and the plan takes a "complete street" approach for the overall study area. This approach assumes that movement throughout the study area and to its destinations be safe and comfortable for all transportation user groups – motorists, transit riders, bicyclists, and pedestrians. The process begins with a detailed traffic analysis that considers existing patterns and defines future needs, and then integrates transportation system design at both large and small scales into the visual and development environment.

Streetscape & Landscape Improvements. Mt. Rushmore Road passes through a variety of urban contexts, including the downtown setting to the north; a mix of small-scale residential, office, and commercial uses in the center; and auto-oriented "strip" development to the south. The role and age of each context produces a specific street character. This plan views streetscape as a way to unify the corridor, improve its image, expand its market, and enhance human scale and pedestrian accommodations. Recommendations are based on public input and a realistic assessment of the possibilities.



This planning approach, relating development potential, transportation function, and visual streetscape produces a realistic vision. It understands the power of a vision for the Mt. Rushmore Road corridor that is grounded in function, realism, context, and economics.

Planning Process

This plan's concepts are informed by the opinions and perceptions of residents and people who work or invest in Rapid City. While business and property owners are typically the primary participants in a corridor planning process, every community resident has a stake in this area. The planning process invited extensive public participation in defining a future for Mt. Rushmore Road and its environs.

The public participation process included:

- *Steering Committee.* A project steering committee, composed of key stakeholders in the corridor, was central to the planning process. The committee included economic development agencies, property owners, real estate and development interests, government agencies, and others, and engaged actively throughout the process.

- *Kick-off Meeting.* The actual planning process began with a kick-off meeting in 2007. This meeting reviewed the planning process and considered the experience of other communities with active corridor development plans.

- *Stakeholder Interviews.* Residents, business and property owners, financial institutions, and public officials participated in discussions to share their opinions of the corridor and its future opportunities.

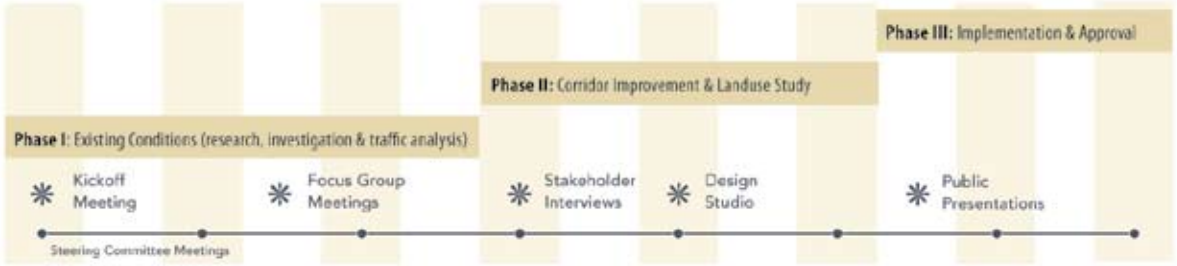
- *Field Investigation.* Consultants did a thorough inventory of existing conditions, documenting street design and configuration, land use, pedestrian facilities, and streetscape elements.

- *Analysis.* The consultant team developed a library of images of the corridor and the surrounding neighborhood

- *Design Studio.* A three-day design workshops in Rapid City engaged citizens, residents, business owners, and other stakeholders in the planning process. Participants shared their ideas, issues and concerns informally and interactively with the planning team.

- *Plan Refinement.* The concepts developed during the studio were evaluated, tested, and modified, resulting in a refined concept.

- *Open House.* The open house provided the public an opportunity to review and provide comments to the development concept prior to the approval process.



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CHAPTER 2

Existing Conditions

Rapid City's Mt. Rushmore Road and surrounding areas include a lively downtown, major road-related commercial, housing that is gradually converting to other uses, the unique West Boulevard Historic District, and other adjacent residential areas. This chapter examines existing conditions in this study area and discusses some of its opportunities.

Existing Conditions

This analysis of existing conditions addresses:

- ***Land Uses (page 12)***
- ***Transportation System (page 19)***
- ***Utilities (page 21)***
- ***Stormwater Management (page 22)***

It provides:

- A detailed inventory of the corridor's uses and businesses throughout the project area.
- An assessment of existing conditions, including identification of issues and deficiencies.
- Identification of major development opportunities, including vacant or underused sites.
- Examination of stormwater management and other infrastructure systems.

Land Uses

EXISTING LAND USE

Table 2.1 quantifies land uses adjacent to Mt. Rushmore Road by measuring their proportion of street frontage. Map 2.1 locates these uses and identifies surrounding land uses in the study area.

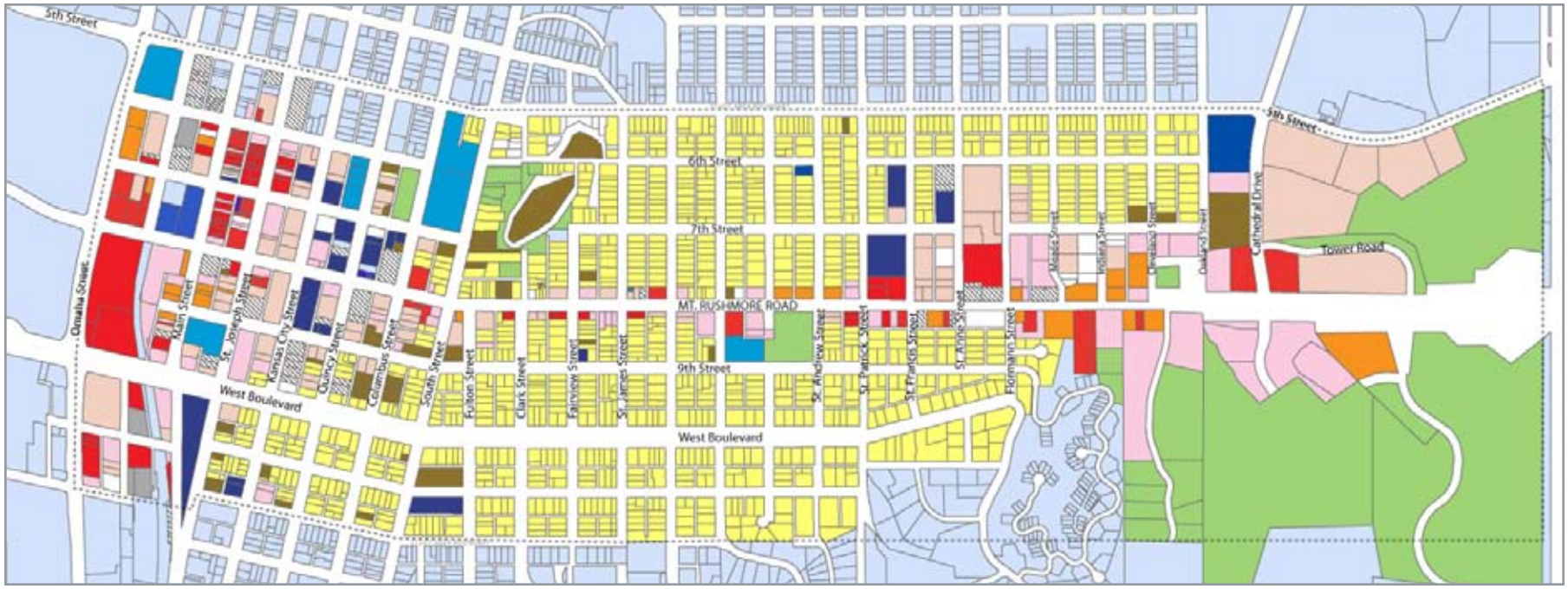
Commercial uses occupy about 65% of Mt. Rushmore Road's linear frontage. Of these, retail uses make up 31% of the street length, while services and hospitality constitute 24% and 10% respectively. Offices and medical services are also significant, accounting for another 20% of street frontage. Vacant lots or parking lots use about 825 linear feet along the street, the equivalent of about two blocks.

Table 2.1 Land Use along Mt. Rushmore Road, Linear Distance

Land Use	Street Frontage (Feet)	Percent
Residential	955	6.0%
Retail	4,925	31.2%
Service	3,815	24.2%
Office	1,810	11.5%
Medical Service	1,525	9.7%
Civic	150	0.9%
Parks and Open Space	300	1.9%
Hospitality	1,490	9.4%
Vacant or Parking Lot	825	5.2%
Total	15,795	100.0%

Source: Rapid City, RDG Planning & Design, 2008

Map 2.1: Existing Land Use Map



Source: Rapid City, RDG Planning & Design, 2008

DEVELOPMENT CHARACTER

Land use and development patterns along Mt. Rushmore Road produce six character zones, with individual features, scale, uses, building forms, and street relationships. Map 2.2 shows the area of each zone. These include:

- Downtown Core
- Mixed Use
- Commercial Corridor
- Services Fringe
- West Boulevard Historic District
- East Neighborhood

Downtown Core (Omaha to Quincy Streets). Mt. Rushmore Road passes through Rapid City's traditional Central Business District. Traffic signals at each intersection manage movement through the corridor. Buildings range from one to three stories and are built to the property line. While these buildings include some commercial uses, Main and St. Joseph Street east of Mt. Rushmore are Downtown's primary retail streets.

Mixed Use (Quincy to St. Andrew Streets). The orientation of Rapid City's street grid shifts to ordinal directions at South Street. This area includes smaller scale buildings, including a number of houses converted to commercial uses. Mt. Rushmore Road has some on-street parking in this area. Most properties also provide parking in small off-street lots, with access from both Mt. Rushmore and parallel alleys.

Commercial Corridor (Franklin to Cleveland Streets). This segment includes commercial and office uses, often in larger-scale, free-standing buildings separated from the street by parking. Most properties have direct access to Mt. Rushmore Road. A substantial amount of commercial development has occurred in this segment during the last ten years. Commercial uses include retail, services, and traditional tourism-oriented businesses such as motels and souvenir shops.

Services Fringe (Cleveland Street to Tower Road). South of Cleveland Street, limited access and more rugged topography produce internalized developments, contrasting with the more built-up area to the north. Access to developments is from intersecting

streets rather than Mt. Rushmore Road. Typical uses include lodging and offices, including medical offices related to the nearby Rapid City Regional Hospital on Cathedral Drive.

West Boulevard Historic District. The West Boulevard District and surrounding areas provide high quality residential settings. West Boulevard, the heart of the district, is a classic boulevard with its wide landscaped median, street trees, and ornamental lighting. The district has a grand public space for its strongly street-oriented adjacent houses.

East Neighborhood. The neighborhood is generally sound and has easy access to all parts of the City. The area is loosely bounded by 5th Street on the east and Mt. Rushmore Road on the west. Its houses, well-maintained but somewhat more modest than many in the West Boulevard district, are typically oriented to east-west local streets.

EMERGING ISSUES

Residential uses along Mt. Rushmore Road. The few houses that directly face the arterial are located in the Mixed Use segment. Because of traffic effects, some of these houses display signs of deterioration and deferred maintenance. Trends suggest that these buildings may convert to other uses or continue to decline without significant action.

East Neighborhood. New medical facilities and services continue to grow in Rapid City. These services cluster in the southeast portion of the study area, putting pressure on residential blocks. Parking lots and non-residential uses can erode residential quality, unless transitions are carefully managed.

Hospitality Services. Independent motels developed along this traditional tourist corridor to the Black Hills and the National Memorial. As they age, these motels must compete with newer chain establishments. However, some of them can offer distinctive accommodations along a thematic corridor. Others may present attractive redevelopment sites.

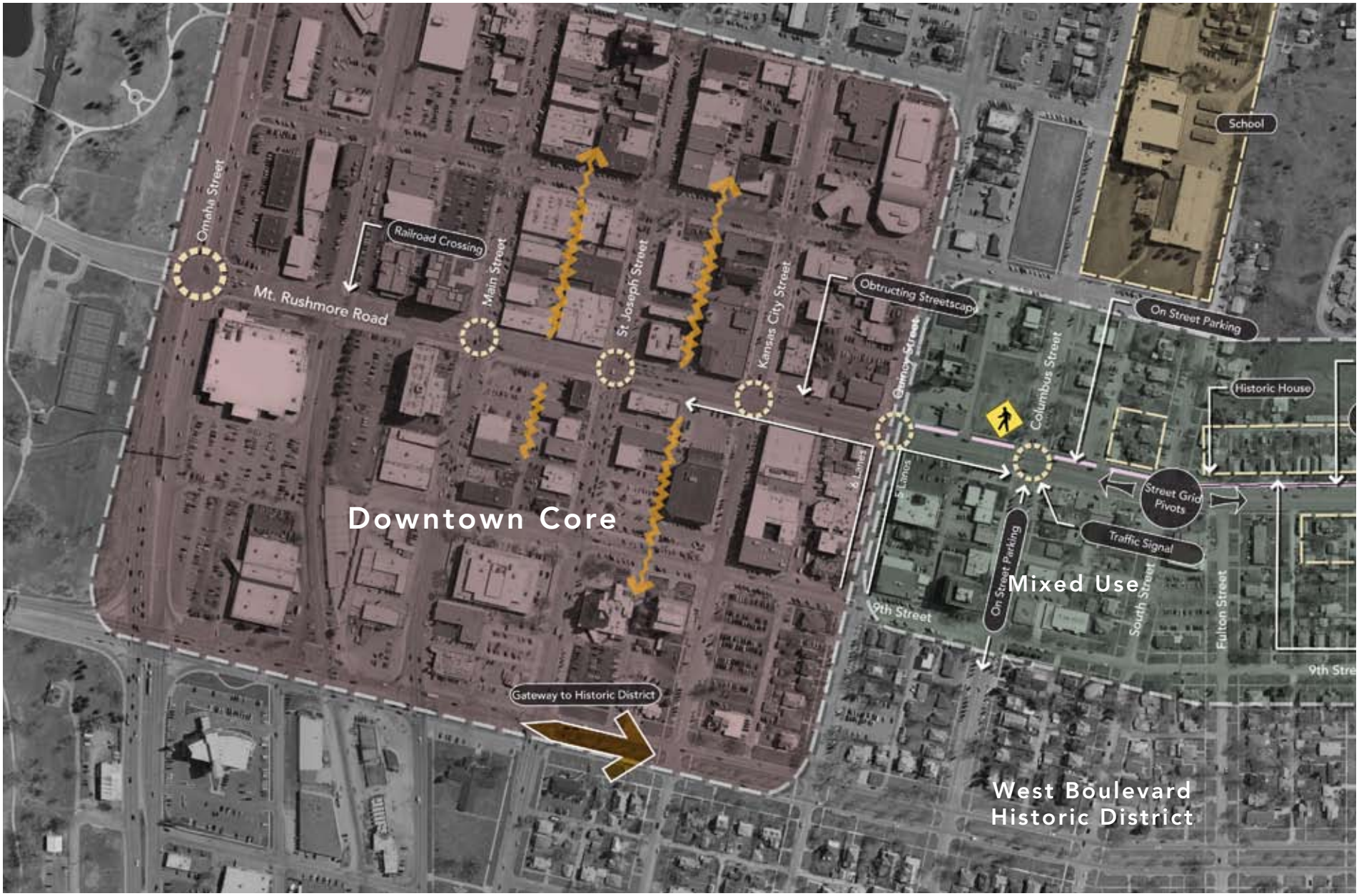
Westward Encroachments into Residential Areas. Some residential properties along Mt. Rushmore Road have been redeveloped with new commercial uses, moving non-residential uses toward the West Boulevard District. A poorly defined edge invites further encroachments, affecting the character and quality of the adjacent neighborhood.

Wilson Park Area. Conversions of single-family homes to office uses around Wilson Park have respected neighborhood quality by maintaining residential scale. In these cases, maintaining residential form is more important than rigid use limitations. Where conversion or redevelopment occurs, new projects should respect neighborhood scale and design patterns.

Vacancy. Vacant lots and buildings provide opportunities for productive redevelopment and full use of urban infrastructure. These vacancies are identified in Map 2.1.

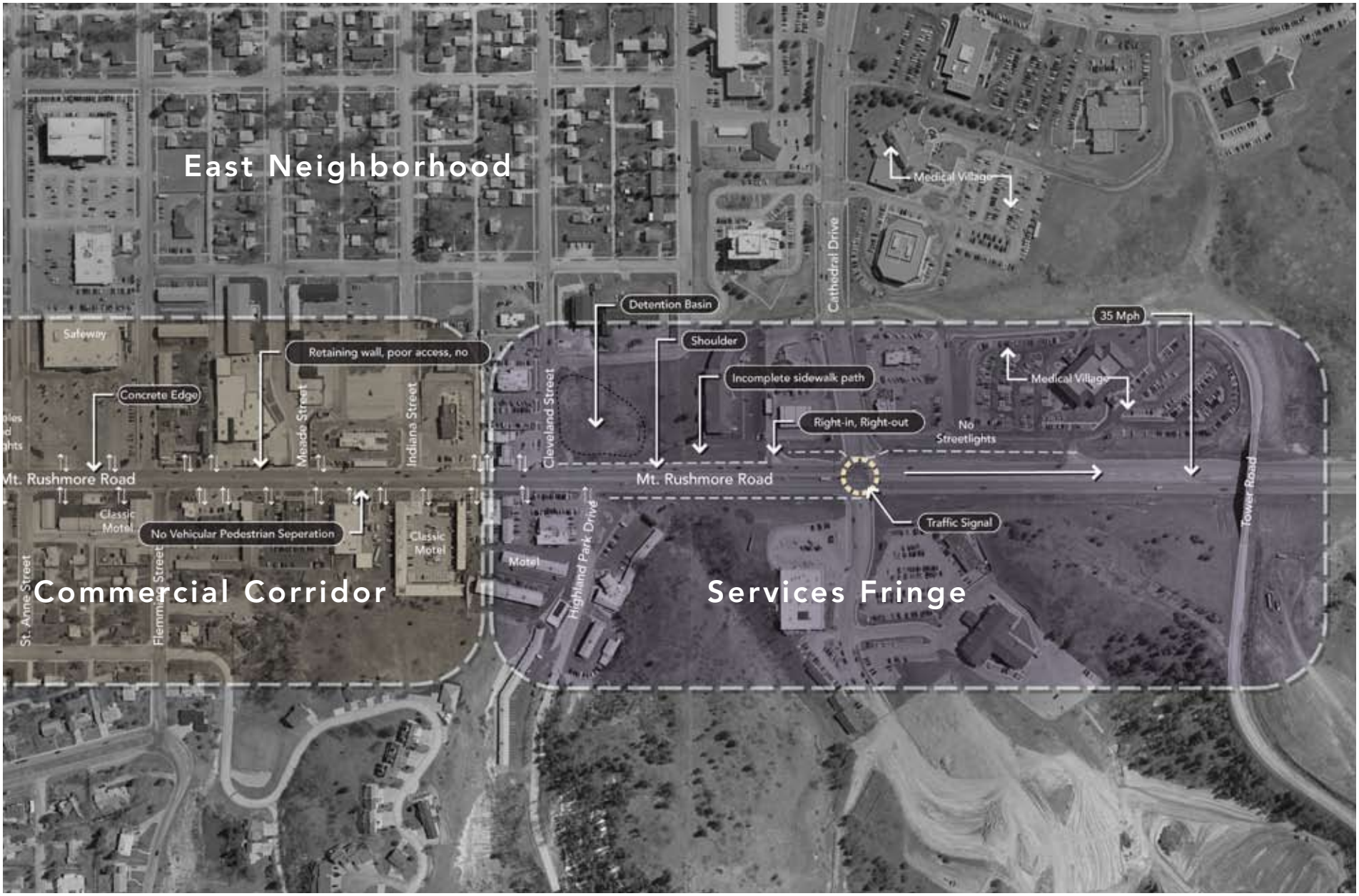
Topography. Terrain causes commercial projects east of Mt. Rushmore Road to use retaining walls. These walls can create barriers that keep people from reaching businesses and moving through the area.

Map 2.2a: Character Map



Map 2.2b: Character Map

Map 2.2c: Character Map



Transportation System

This section summarizes key conclusions and recommendations from the companion Mt. Rushmore Road Traffic Operations Study, completed in coordination with this study. These findings are integrated as basic assumptions of this corridor development plan.

TRAFFIC PATTERNS AND OPERATIONS

- Traffic to Mt. Rushmore National Memorial is funneled to Mt. Rushmore Road by way of Interstate 190 and US Highway 16.
- The Elk Vale Road/Caltron Boulevard truck route provides an alternative way to the Mt. Rushmore Memorial that diverts travelers away from the city and its commercial services. This route intersects US Highway 16 south of the study area.
- While speed limits are marked at 35 miles per hour, traffic tends to exceed that limit at the south end of the corridor.
- Right-of-way width of Mt. Rushmore Road between Omaha Street and St. Patrick Street is 95 feet, decreasing to 66 feet south of St. Patrick Street.

TRAFFIC OPERATIONS

The Traffic Operations Study (Appendix B) evaluates the need to change geometric and operational functions of Mt. Rushmore Road to accommodate traffic projected for 2030. It considers peak flows during mornings and evenings throughout the year, and also considered tourism traffic. The study evaluates the Level of Service (LOS) projected in 2030 for intersections and roadways.

Intersections. The current roadway geometry will provide a LOS C or better at most intersections in this corridor. Map 2.2 identifies existing signalized intersections; the study considers additional signalizations, but concludes that they are not warranted by current operations. Larger storage lengths and additional lanes will be required to accommodate additional traffic at the following intersections:

- *Omaha Street.* Modify northbound left turn lane from 180' to 200' of storage.
- *Main Street.* Modify northbound left turn lane from 100' feet to 365' of storage. Also, construct westbound left turn lane with 200' of storage.
- *St.* Joseph Street. Construct westbound left turn lane with 200' of storage.
- *St.* Patrick Street. Modify southbound left turn lane from 100' to 230' of storage. Also, modify westbound left turn lane from 100' to 150' of storage.
- *Cathedral Drive.* Modify southbound left turn lane from 400' to 650' of storage.

Roadways. During morning peak hours projected by a 2030 model, the Central Business District portion of the arterial could expect to receive a LOS D for northbound and southbound traffic. The remaining portion of the arterial could expect to receive a LOS C for northbound traffic and LOS B for southbound traffic.

During evening peak hours, The Central Business District portion of the arterial could expect to receive a LOS D for northbound and southbound traffic. The remaining portion of the arterial could expect to receive a LOS C for northbound traffic and LOS B for southbound traffic.

Summary. Based on these geometric and operational findings, Mt. Rushmore Road should continue to operate as a four-lane roadway with left turn lanes at intersections. A raised median should be considered at feasible locations to minimize vehicular conflicts and potential crashes with vehicles using adjacent private driveways.

CRASH ANALYSIS

The Traffic Operations Study (a separate document) analyzes crash data for Mt. Rushmore Road between 2004 and 2006 to determine crash trends and consider corrective measures. The Traffic Operations Study identifies the location and type of accident.

- The corridor experienced 323 crash incidents during the study period, with the number declining each successive year. About 44% of all crashes were angle collisions, 39% were rear-ends, 12% were non-vehicular and the remaining 5% were sideswipe, overturn or head-on. Nearly half of angle collisions involved left turn movements.

- Four crashes involved parking maneuvers on St. Joseph and Main Street.

- A concentration of crashes occurred mid-block between Flormann Street and St. Anne Street, adjacent to Safeway grocery store driveway.

Recommendations. The Traffic Operations Study recommends the following actions:

- Consolidate driveways to reduce vehicular conflicts to Mt. Rushmore Road from vehicles accessing adjacent properties. Implement the Rapid City Access Management Plan to revise non-compliant intersections. Proposed access revisions were presented at public meetings and are reflected in the Corridor Vision graphics found in this report.

- Remove the Safeway grocery store driveway from Mt. Rushmore Road and utilize access from side streets due to crash history in the vicinity of this driveway.

- Install actuated controller at the signalized intersection at St. Patrick Street to reduce rear-end and angle collisions. Properly designed actuated controllers will reduce the likelihood of a signal changing phases while vehicles are caught in the dilemma zone. The current pretimed controller does not provide dilemma zone protection.

- Evaluate the adequacy of current street lighting from St. Patrick Street to St. Andrew Street. Ten night-time crashes occurred at these intersections or between them during the study period.

- Evaluate the adequacy of current street lighting at St. Cloud Street.

- Increase clearance intervals at signalized intersections to reduce right-angle and left-turn collisions.

BICYCLE TRANSPORTATION

Mt. Rushmore Road lacks route designation, infrastructure accommodation, or pavement markings for bicyclists. Fifth Street between South and Cleveland Streets is a designated bike route. Bicycle transportation is discussed fully in Chapter Three.

PARKING

Mt. Rushmore Road provides on-street parallel parking between St. James and Quincy Streets. (See Map 2.2) These spaces create maneuvering difficulties and interrupt traffic flow. Off-street surface parking is typically available to accommodate patrons.

PEDESTRIAN ENVIRONMENT

The sidewalk network along the Mt. Rushmore corridor and surrounding neighborhoods is relatively complete. Sidewalks do not exist south of Cleveland Street, and pedestrians sometimes use paved shoulders in these areas. In several situations, sidewalks are deteriorated or intersections are not accessible to people with disabilities. (See Map 2.2)

Despite the presence of sidewalks, the corridor presents an unfriendly pedestrian environment. Back of curb sidewalks are narrow, unprotected, and virtually impassible during the winter. There is potential for pedestrian and vehicular conflict when curbside sidewalks are used.

Sidewalks are discussed in more detail in Chapter 3.

Utilities

LIGHTING

Street lighting and utility distribution systems are configured in three ways along Mt. Rushmore Road:

- South of St. Patrick Street, wood poles with overhead wires are staggered along both sides of the street. Cobra head fixtures mounted to mast arms extend from these poles provide street lighting.
- North from St. Patrick Street to Kansas City Street, galvanized poles support cobra head fixtures on the east side, while wood poles and overhead distribution continue on the west side.
- North of Kansas City Street, 25-foot galvanized poles support cobra head fixtures. Overhead utility lines run along alleys.

In Downtown, "acorn" fixtures, mounted both to pre-existing and new poles, provide pedestrian-scaled lighting. Kansas City Street, Rapid City's most recent downtown streetscape project, uses "teardrop" roadway fixtures with lower-level acorn lamps for sidewalk illumination. The Historic West Boulevard Neighborhood uses acorn fixtures mounted to cast concrete poles.

Burial or consolidation of utility lines can reduce visual clutter along the corridor.

WATER SUPPLY

Based on discussion with City staff and review of the existing utility system, reconstruction along the Mt. Rushmore Road corridor should incorporate several improvements, some of which extend beyond the immediate Mt. Rushmore Road right-of-way. General observations and directions for a coordinated program follow:

- The Utility System Master Plan indicates no major water supply system improvements planned within the corridor. However, all substandard four- and six-inch diameter mains should be replaced with eight-inch mains.
- Consider a hydraulic system evaluation for the entire corridor. Deficiencies appear to be undersized 4" and 6" mains and dead end mains. Use water supply modeling to determine appropriate size of replacement mains. The deficiencies in the system should be addressed within the scope of the existing demand.
- Consider main diameter, age, material, fire protection, and operational criteria when determining water distribution improvements.

Specific Needs

Along Mt. Rushmore Road, life cycle costs and minimizing future traffic interruptions become important considerations for the planning and design of the utilities. Service line crossings in the driving lanes for Mt. Rushmore Road should be addressed by reconstruction projects.

Some opportunities for improving water supply pressures and flows with the project area follow. Other possibilities exist, and a flow analysis using several scenarios should be used to identify the most cost-effective choices.

- Consider dual mains along either side of Mt. Rushmore Road to minimize services lines within future driving lanes.
- Analyze the existing parallel 12" mains in St. Patrick Street from West Boulevard to Seventh Street for possible up-sizing. Extend existing 8" and 12" mains along Kansas City Street east of Mt. Rushmore Road west to 11th Street.
- On Cathedral Drive and Cleveland Street, connect proposed dual mains on Mt. Rushmore Road to the existing 16 inch main on Seventh Street for appropriate looping.
- Consider extending the existing 10-inch St. James Street main east from the 11th Street intersection east to Mt. Rushmore Road.

SANITARY SEWER

The sanitary sewer mains within Mt. Rushmore Road are approaching or have exceeded their design life, assuming that they are about as old as surrounding development. Mains along the corridor should be videotaped to determine their structural integrity. Non-compliant services should be identified to the greatest degree possible. City Utility Maintenance personnel should also identify maintenance and backup histories that require further investigation during design. Replacement of cross-street mains within the Mt. Rushmore Road right-of-way should be considered.

Specific Needs

While the Rapid City Utility System Master Plan does not propose other improvements, several opportunities for specific system improvements follow:

- Consider sizing changes for mains in alleys crossing Mt. Rushmore Road north of Columbus Street and north of Quincy Street. These mains act as collectors that re-direct flow from the south.
- With reconstruction, consider replacing mains in the alley across Mt. Rushmore Road north of Main Street. These mains drain a large service area. The Utility System Master Plan notes sewer capacity issues.
- Replace the alley mains crossing Mt. Rushmore Road north of both Kansas City and St. Joseph Streets with any reconstruction project.
- Evaluate the condition of the main on Mt. Rushmore Road from Omaha Street south to the alley north of Main Street.
- Consider replacing main crossings at St. Francis Street and Indiana Street with any reconstruction. Evaluate the water main capacity along these streets.
- Evaluate the main crossing at Cathedral Drive for capacity and condition. Development activity in the service area upstream of Mt. Rushmore Road has increased since installation of the original main crossing, and future westward extension of Cathedral Drive will exacerbate the problem.

Stormwater Management

Mt. Rushmore Road is an urban section street with curbs and gutters north of Cleveland Street. Stormwater runoff accumulates primarily in two drainage basins. The Downtown Basin receives runoff north of St. Patrick Street, while the Meade/Hawthorne Basin receives runoff south of St. Patrick Street. Another detention cell is located at the southeast corner of Cleveland Street and Mt. Rushmore Road.

Limited space is available along the corridor to implement stormwater management facilities, such as bioretention, infiltration basins, filter and buffer strips. In general:

- Downtown Area Drainage Basin provides limited opportunities for stormwater management because of dense development. Best management practices with the right-of-way should be considered.
- The Meade-Hawthorne Basin has undeveloped parcels that could be used as detention and retention basins along the drainage channels. These parcels are located east of Meade and 3rd Streets, east of Oak Avenue and Tallent Street, south of Montana Street west of Wisconsin Avenue, southeast of E. Fairlane Drive and east of Ivy Avenue south of E. Oakland Street.
- West Boulevard could intercept high velocity runoff from the west slopes. Further study is needed, however the existing conveyance system could be upgraded.
- Flooding might be managed with regional infrastructure at the upper portions of the drainage basins, and possible retrofits at lower portions. Improving the detention pond with an emergency spillway at the southwest corner of Fairmont Boulevard and Mt. Rushmore Road could help manage runoff.
- Low-impact stormwater design along the corridor should include Best Management Practices in new development and redevelopment of private property adjacent to the street.

A detailed analysis of the two basins, based on the Drainage Basin Design Plans, follows.

MEADE/HAWTHORNE DRAINAGE BASIN DESIGN PLAN (TOWER ROAD NORTH TO ST. PATRICK STREET)

Infrastructure

According to the Drainage Basin Design Plan, the major improvements recommended for managing area runoff are referenced as Element #47. The detail included in the Drainage Basin Design Plan contains multiple facets for consideration.

In general, the existing storm sewer identified in Element #47 is inadequate and improvements are recommended. At Mt. Rushmore Road and St. Francis Street the existing 30-36 inch storm sewer should be replaced with a 42 inch storm sewer. Inlets should be installed to capture flow to meet street drainage criteria. Extension of the storm sewer upstream of Mt. Rushmore Road is recommended to intercept flows prior to impacting this arterial street.

Mt. Rushmore Road generally lacks inlets and storm sewer for on-street flows and capturing upstream (westerly) flows before they enter the street. Any roadway design should include a hydrology and hydraulics study to detail the local area, expected flows, and infrastructure needed to mitigate the runoff to meet current City criteria.

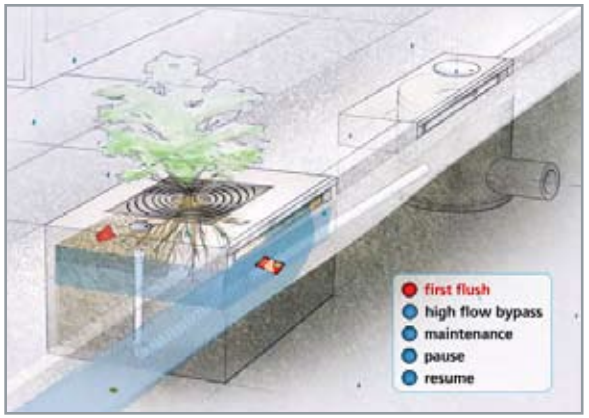
Stormwater Quality

The Drainage Basin Design Plan does not identify storm water quality improvements other than mitigation by detention ponds identified in the plan. Runoff controls have not been built along Mt. Rushmore, despite its heavy commercial development and high percentage of impermeable surfaces. Contaminants from the streets and parking lots should be a primary consideration for storm water quality enhancements.

According to the Drainage Basin Design Plan, sub-basins 25, 45, 47 and 48 affect the corridor. Basins 25 and 47 west of the commercial development are the only basins with existing available detention. Development upstream is limited currently to very low density residential. Subbasins 45 and 48 flow uncontrolled into the existing storm sewer system. Some options exist near the west terminus of Hyland Park Drive for detention and storm water quality enhancements.

At the downstream end of subbasin 48, with considerable commercial development along Mt. Rushmore Road, options for storm water quality enhancements are probably limited to on-site controls that coincide with private site redevelopment. In the southwest quadrant of Highland Park Drive and Mt. Rushmore Road, an existing storm water inlet and a detention pond exist. This pond has some potential for future storm water quality enhancement.

Basin 45 lacks existing facilities for limiting runoff above Mt. Rushmore Road and feasible possibilities may also be limited. Because limited right-of way limits the possibility of medians adequate to drain runoff, all redevelopment along the corridor should include some on-site detention/retention/landscaping areas. This will reduce runoff quantities affecting downstream facilities. Another possible option is using water quality curb inlets, strategically located within the project corridor to maximize stormwater quality (see image).



DOWNTOWN DRAINAGE BASIN DESIGN PLAN (ST. PATRICK STREET NORTH TO RAPID CREEK)

Infrastructure

The drainage system for the west half of the Downtown drainage basin above Kansas City Street can be separated into three subareas: west of West Boulevard, the 9th Street corridor between West Boulevard and Mt. Rushmore Road, and 7th Street to Mt. Rushmore Road extending in some places to 9th Street. According to the Drainage Basin Design Plan, infrastructure has been designed for a 10 year event.

The area west of West Boulevard drains to West Boulevard and continues north in the boulevard's storm sewer to Kansas City Street. Here, the storm sewer and street trap the flow from the south before it continues through the central downtown area.

Improvements proposed in the Drainage Basin Design

Plan for 9th Street have not been built and should be developed with Mt. Rushmore Road corridor improvements. A new storm sewer from St. Charles Street to Kansas City Street will help capture the runoff before reaching Mt. Rushmore Road. The profile of 9th Street paving will need to be lowered.

In the Mt. Rushmore Road corridor, the storm sewer north of Fairview Street accommodates a 10 year event, but the plan does not address the stormwater management south of Fairview Street. A drainage study should be initiated to define needed improvements.

Historically, the area in and near the intersection of Mt. Rushmore Road and Fairview Street has been known to flood. Flooding is primarily due to the flat longitudinal street grades in the vicinity and the lack of appropriately sized storm water facilities.

North of St. Patrick, Mt. Rushmore Road's storm sewers range from 24 inches to 54 inches in diameter. This area suffers from inadequate inlet capacity, little or no side street interception of runoff, cross street flows in places, and insufficient street cross-slope for efficient movement of runoff to gutters.

North of Fairview Street between West Boulevard and 7th Street, the system is not well defined. Runoff generally flows north towards Rapid Creek but lack of storm sewers in 9th Street and inadequate inlet capacity causes runoff to flow south of Kansas City Street.

The City should consider construction of a 9th Street storm sewer and upgrading of the Mt. Rushmore Road system. The original Drainage Basin Design Plan was based on a 10 year design event. A hydrology and hydraulics study of the corridor and adjacent areas affecting the corridor using current design criteria is necessary to craft a plan for needed storm water infrastructure.

Storm Water Quality

Storm water quality improvements are not identified in the Drainage Basin Design Plan. Incorporating stormwater quality enhancements into a existing narrow corridor with heavy adjacent development will be difficult.

Along 9th Street, creating subareas served by water quality catch basins or similar storm water quality devices may prove effective. These devices take little space and can be installed near future inlet groups. Specific locations would be determined during detailed design.

Along Mt. Rushmore Road, storm water quality implementation is difficult. All redevelopment along the corridor should incorporate on-site detention, retention, or landscaping areas to trap and cleanse the runoff.

Enhancement implementation nearer to downtown becomes increasingly difficult because of right-of-way limitations and impermeable surfaces. Existing parking lots may be modified and used to detain stormwater in some areas. Redevelopment should include such storm water quality improvements as water quality catch basins.

CHAPTER 3

Mt. Rushmore Road Corridor Vision

Mt. Rushmore Road is a major retail and service district, but many believe that the Southeast Truck Route, emerging competition, and obsolescence threaten this status. However, a community vision, shared by residents and businesses, can lead to a distinctive environment that can encourage investment, expand business, and restore the corridor's competitive advantage.

Strategic public actions can use Mt. Rushmore Road's assets and character to generate what Alex Garvin, author of *The American City, What Works, What Doesn't*, describes as the objective of a good plan: "a sustained and widespread private market reaction which improves the quality of life of the affected community". This chapter describes such a program of actions and recommendations, through three parts:

- **THE OBJECTIVES,** defining the desired outcomes of the program.
- **THE ENVIRONMENTS,** considering the inter-related components of the plan – transportation, development, visual aesthetics, neighborhoods, and natural environment.
- **THE DEVELOPMENT CONCEPT,** illustrating detailed recommendations and projects for each character segment.

THE OBJECTIVES

INCREASE BUSINESS & PRIVATE INVESTMENT

The Mt. Rushmore Road Corridor Development Plan should lead to actions that significantly improve the district's business and investment climate. The program should stabilize existing businesses, and reward desirable new investments that strengthen the district. Public realm investments can create conditions for desirable private responses that will preserve and increase property values, increase sales tax revenues, and attracts new businesses.

CREATE A DISTINCTIVE IMAGE AND EXPERIENCE

In an increasingly competitive environment, a traditional business corridor like Mt. Rushmore Road must become a destination – a place that offers a distinctive experience and attractive setting to customers. Mt. Rushmore Road must become more than a generic "strip" as alternative business areas grow. This corridor has many assets, such as its traditional status as the "main street" to the Mt. Rushmore Memorial and the Black Hills, unique and appealingly quirky motels and souvenir shops, surrounding landforms, features such as Wilson Park and the neighboring West Boulevard Historic District. This development program is designed to take advantage of these and other features to create a corridor that is more than a route through the city that is lined by free-standing commercial uses.

DEVELOPMENT OPPORTUNITIES

While most of the corridor is built up, opportunities for redevelopment still exist. These opportunities include vacant or underused sites, obsolete commercial uses, unnecessarily large parking lots, and declining residential structures. A thoughtful development concept can guide the reuse of these sites, and can help ensure that reinvestment produces results that are both rewarding and advance the interests of the entire district.

COMPLETE TRANSPORTATION

Complete streets are corridors that safely and efficiently accommodate all transportation modes, including motor vehicles, transit, and pedestrian and bicycle transportation. The ideal complete street should include:

- A trafficway that moves motorized traffic smoothly at desired speeds.
- Barrier-free sidewalks or pedestrian paths that are accessible during all seasons and provides a comfortable separation from moving traffic.
- Safe and convenient crossings that prevent the street from becoming a barrier to pedestrian movement.
- Bicycle lanes, a safe bicycle track, or other accommodation that makes bicycle transportation part of normal and predictable traffic movement.

- Accommodations for public transportation that may include informational graphics, waiting areas, weather protection, farside bus turnouts, and other features.

Complete corridors address transportation equity by serving the individual needs of groups such as seniors, children, and people with disabilities. Increasing concerns about community wellness, greenhouse gas emissions, and unstable fuel costs have expanded interest in alternative transportation modes.

Traffic calming devices are also a part of complete transportation design, and help streets operate more comfortably and appropriately in their urban contexts. Calming devices such as landscaped islands, speed tables, crosswalks, street landscaping, curb extensions, and changes in paving surfaces, discourage speeding, improve motorist attentiveness, and enhance the street environment. They can also mark transitions from commercial to residential environments, particularly important in this study area.

Mt. Rushmore Road itself may not be able to incorporate all of these features, but the study area, taken together, should accommodate all modes of transportation. For example, the arterial street does not present a comfortable shared use environment and lacks adequate right-of-way to accommodate bicycle lanes.

Left: Examples of complete streets. Top: Broadway in St. Louis' Soulard neighborhood. Middle: Santa Monica Boulevard in Los Angeles. Bottom: 32nd Avenue in Omaha, planned for implementation in 2009-2010.

However, parallel streets with light to moderate traffic promotes the same level of access with a much safer and lower-cost facility.

The National Complete Streets Coalition (www.completestreets.org), an association of organizations such as the Institute of Transportation Engineers, the American Planning Association, AARP, and the League of American Bicyclists is an excellent source of information on street design and status of policy in the United States.

IMPROVED FUNCTIONAL SAFETY

Mt. Rushmore Road should present a safer transportation environment for all users. Current problems include friction between local and through traffic, frequent and conflicting driveway cuts, conflicting left turn movements, poor pedestrian access, and, in some places, a substandard street section. Complete transportation concepts improve safety, but other techniques are needed to reduce the possibility of crashes. These include rationalizing access points, controlling left turn movements, and reducing conflicts between different traffic streams. Access and left-turn management programs should not reduce access or impede the operation of individual businesses. In fact, they can provide greater customer comfort and, in many cases, more parking.

Offset pedestrian crossings in Las Vegas, Nevada.

Upper right: Portland, Oregon

ENVIRONMENTAL SUSTAINABILITY

Major commercial corridors like Mt. Rushmore Road have a high percentage of impervious surface, complicating stormwater management, creating heat islands, and generating other negative environmental impacts. The overall corridor should evolve toward greater sustainability by minimizing these effects and incorporating best management practices into street and development design. Mixed uses on development sites and facilities that encourage use of non-motorized transportation modes for short trips also creates a more sustainable corridor.

MUTUALLY REINFORCING NEIGHBORHOOD CONNECTIONS

Mt. Rushmore Road is not an isolated corridor, but exists in a neighborhood context. Residents of these neighborhoods are customers for businesses along the corridor, and good physical and circulation linkages, free of obstacles, encourages this desirable interaction. But good connections between a multi-use corridor and surrounding neighborhoods involve managing the edges – filtering out undesirable commercial traffic, minimizing visual and functional incompatibilities, preventing operational effects such as lighting and noise, and others. Unmanaged edges can produce deterioration at the boundaries that can easily spread into the heart of the neighborhood. Commercial areas benefit from healthy surrounding neighborhoods, and residential areas also benefit when nearby retail and service centers thrive.


WEST
BOULEVARD

THE ENVIRONMENTS

This section considers four "environments" that describe the unifying assumptions and principles that the plan applies to individual character segments of Mt. Rushmore Road. The discussion of each of these key areas identifies desirable outcomes and presents strategies to achieve them. The four environments include:

- *Transportation Environment:* Access and mobility to and within the district.
- *Development and Neighborhood Environment:* Future land use and development opportunities, and
- *Urban Design Environment:* The design elements of the district and its overall physical appearance between the Mt. Rushmore Road corridor and its surrounding neighborhoods.
- *Natural Environment and Sustainability.* The environmental performance of the district and its ability to manage factors such as stormwater, emissions, extraneous lighting, and other effects.

Transportation Environment

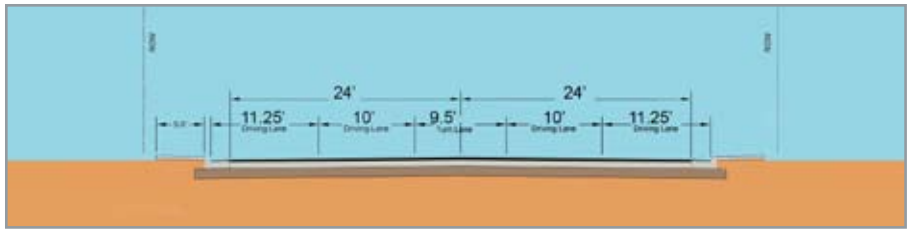
FUNCTIONAL OUTCOMES

- Provide a clearer route directing traffic from I-190 to Mt. Rushmore Road to improve visitor wayfinding and reduce the amount of through and commercial traffic that mistakenly continues south on West Boulevard.
- Safely and comfortably accommodate all modes of transportation, including motor traffic, bicycle and pedestrian transportation, and transit in the corridor and surrounding area.
- Produce smoother, safer traffic operations by minimizing crash points and reducing friction between local and through traffic.
- Maintain good local access to businesses along Mt. Rushmore Road.
- Improve the travel experience, calm traffic, and encourage compliance with safe speed limits by providing a more attractive and pleasant roadscape environment.

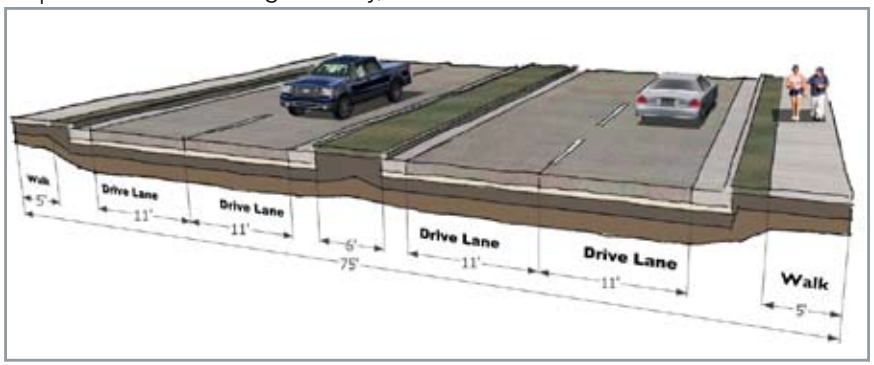
STRATEGIES: MOTOR VEHICLE TRANSPORTATION

- Improve directional information and adjust roadway geometrics to cue inbound traffic from southbound I-190 traffic to Mt. Rushmore Road via Omaha Street.
- Implement a typical street section along Mt. Rushmore Road that provides:
  - » Two standard 11-foot drive lanes in both directions.
  - » A raised and landscaped median, 12- to 16-feet in width, along segments where left-turns between intersecting streets are not required for acceptable business and parking access.
  - » An 11-foot center left-turn lane in areas where continuous left-turn movements are necessary to provide business access.
  - » A landscaped sidewalk setback, typically 6- to 8-feet wide but wider where possible, to provide comfortable and functional separation between the vehicular and pedestrian domains.
  - » Continuous 5-foot minimum sidewalks with barrier-free intersections.
- Provide specific intersection design modifications where necessary and access management measures, consistent with the recommendations of the Traffic Operations Study. These recommendation include:
  - » Increasing the depth of certain turning lanes to accommodate future traffic loads.
  - » Consolidating driveways, controlling left-turn movements, and increasing lighting at high-volume locations to improve safety.
  - » Modifying some intersections to provide an additional turning lane for future traffic loads.
  - » Encouraging connectedness between parking lots and drives as part of the access management program.
  - » Develop convenient off-street parking areas directly accessible from cross streets.

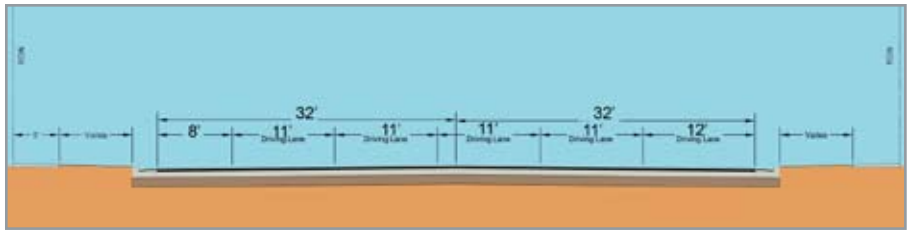
Existing Section: 66’ Right-of-way, Cleveland Street to St. Patrick Street



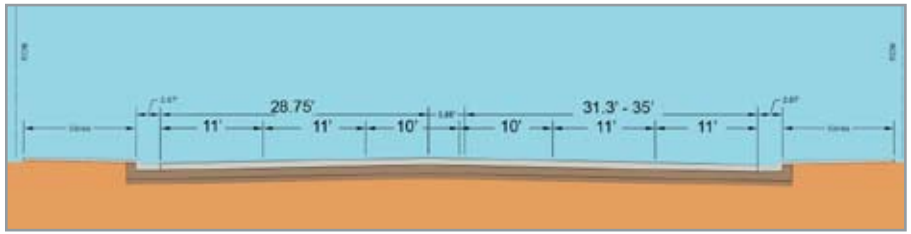
Proposed Section: 75’ Right-of-way, Cleveland Street to St. Patrick Street



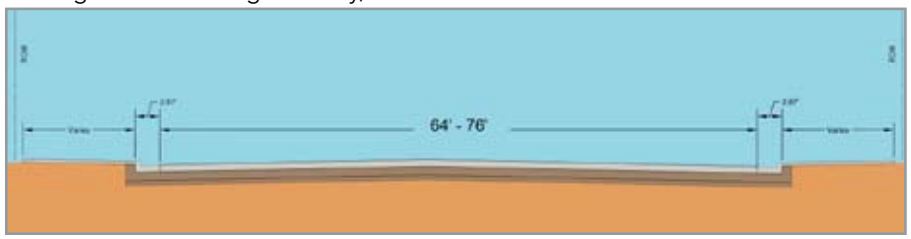
Existing Section: 95’ Right-of-way, St. Patrick Street to Kansas City Street



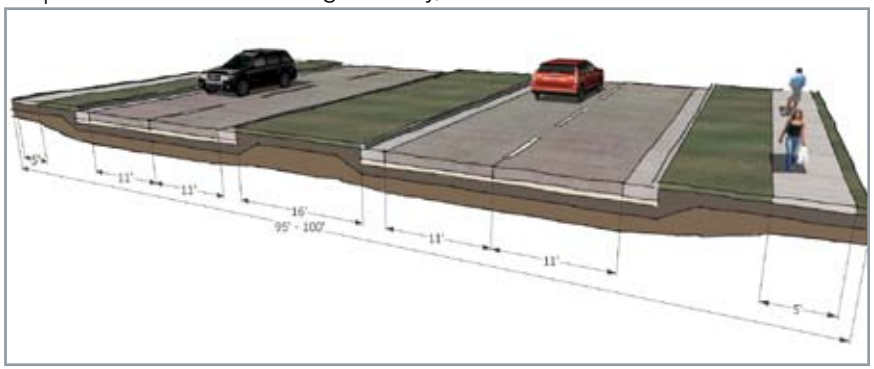
Existing Section: 95’ Right-of-way, Kansas City Street to Main Street



Existing Section: 95’ Right-of-way, Main Street to Omaha Street



Proposed Section: 95’-100’ Right-of-way, St. Patrick Street to Omaha Street



Conceptual street sections for different segments of Mt. Rushmore Road.

Top: Boulevard setback and narrow median in a 75-foot right of way.

Bottom: Wider median and boulevard setbacks permitted by 95-100 fee right-of-way.

Note: The above right-of-way widths are minimums. For planning purposes, from Cleveland Street to St. Patrick Street, 10’ of additional right-of-way is gained on the west and 4’ on the east. These dimensions will likely change during design.

- Replace on-street parking with parking streets on local cross streets on half-blocks between Mt. Rushmore Road and the parallel west alley. This concept, discussed in detail below, maintains local circulation while providing perpendicular head-in parking. The design increases parking now provided along the street in the northern reaches of the study area. A curb extension and surface treatment will also define an edge between the commercial street and the adjacent residential neighborhood, discouraging unwanted traffic.

STRATEGIES: BICYCLE TRANSPORTATION

- Use parallel routes for bicycle transportation, rather than trying to accommodate bicycles on Mt. Rushmore Road itself. Traffic and driveway conditions on Mt. Rushmore Road create a difficult bicycling environment at best, and parallel streets both provide more safer and less stressful routes and serve most Mt. Rushmore Road destinations. Using quieter, parallel routes also reduces right-of-way acquisition needs and allows space for landscaping and sidewalk improvements.

- Develop 9th Street as a bicycle boulevard between Kansas City Street and Flormann Street. The bicycle boulevard concept adapts local, low-volume streets that parallel arterials to shared motor vehicle-bicycle use. These adaptations include:
  - » Pavement markings, such as bike lanes or sharrows.
  - » Traffic calming devices.
  - » Signage for share-the-road and directional information.
  - » Sewer grates with intakes that do not trap wheels.
  - » Removal of other hazards and obstacles to cyclists.

While West Boulevard is also an attractive bicycling environment, 9th Street provides closer parallel access to Mt. Rushmore Road.

- Connect the 9th Street bicycle boulevard to the Rapid Creek Trail. This connection would utilize the Kansas City Street connection to 6th Street, and proceed north to Omaha Street. The signalized intersection at 6th Street provides a protected connection to the Rapid Creek Trail. In the future, a pedestrian bridge over Omaha Street may be warranted, providing an unobstructed path to the trail corridor.

- Establish Flormann Street as an east-west bicycle and pedestrian connection across Mt. Rushmore Road and south to Tower Road. Recommended improvements include realigning and signalizing the Flormann and Mt. Rushmore intersection, and providing bicycle lanes with capital improvements. The Flormann route would extend to 7th Street, continuing south as a bicycle boulevard along 7th to Cleveland, and using a new path on easements to the Cathedral Drive and Tower Road intersection. West of 9th Street, the Flormann route continues as a shared facility to old Highway 16 and the Tower Road overpass, completing the loop.

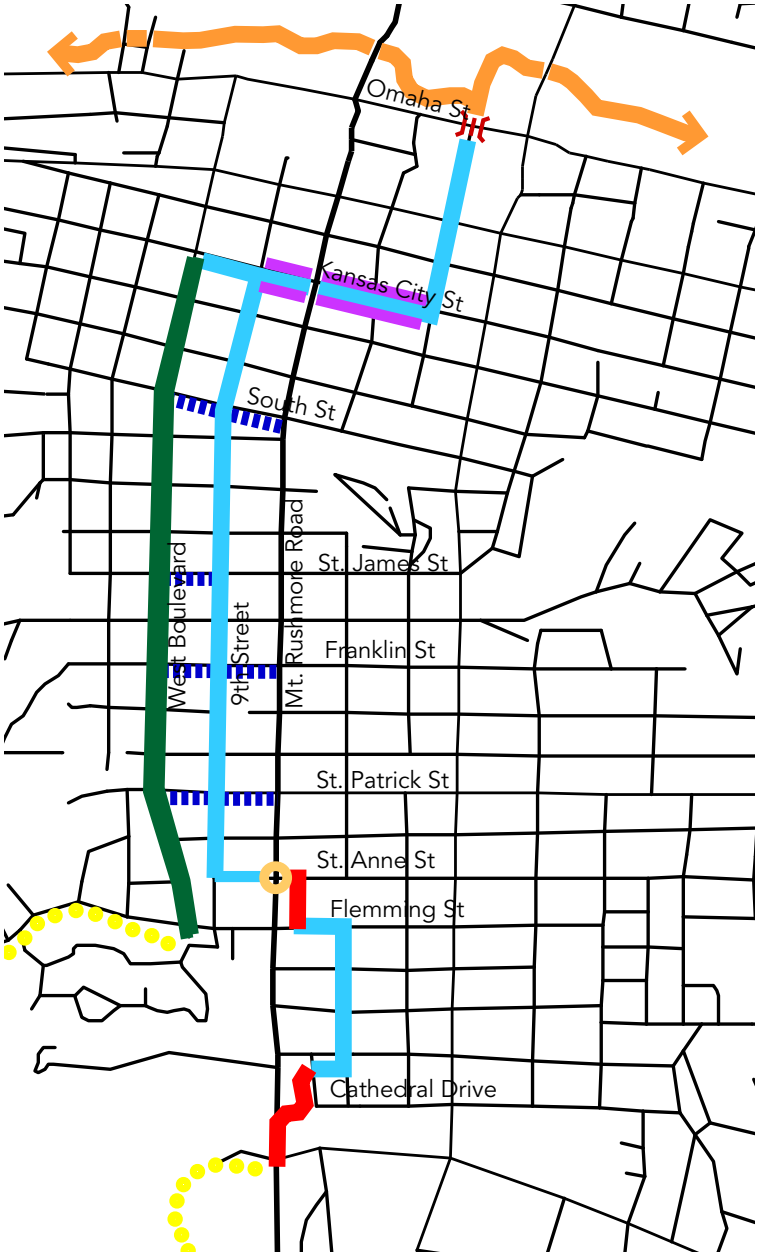
Bicycle track on Kansas City Street, Downtown Rapid City.

- Designate east-west linkages from West Boulevard/9th Street to 5th Street across Mt. Rushmore Road. These designated bicycle routes would connect parallel bicycle-friendly streets to Mt. Rushmore Road destinations. Potential linkages include South, St. James, Franklin, St. Patrick, and Flormann Streets

- Provide bicycle parking facilities at strategic locations.

Map 3.1: Bicycle Transportation

Bicycle boulevards in Berkeley (top) and Saint Louis (above). These streets parallel arterials and provide priority environments for bicycle transportation. Primary investments include removing hazards and providing pavement markings and signage. Bicycle boulevards may use sharrow (shared lane) pavement markings or bike lanes.



Bicycle Transportation

- Bicycle Boulevard (proposed)
- East-West links (proposed)
- True Boulevard (existing/proposed)
- Sidepath (proposed)
- Multi-Use Trail (existing)
- Pedestrian Crossing (proposed)
- Enhanced Ped. Crossing (proposed)
- Share the Road Route (proposed)
- Kansas City St. "Bike track" (existing)

STRATEGIES: PUBLIC TRANSPORTATION

- Coordinate bus stop locations with pedestrian and bicycle crossings of Mt. Rushmore Road. RapidRide's fixed route system and seasonal trolley operates along segments of Mt. Rushmore Road. Bus stops should be considered If on-street bus stops are determined to be too much of an impact on traffic flow, off-street bus stops or bus pullouts should be considered. Bus pullouts along the street may not be practical in many locations due to right-of-way constraints. In those situations, it is recommended to pursue private/public partnerships to allow off-street bus stops within private parking lots.
- Install passenger amenities at key bus stops. Amenities should include weather shelters, benches, and attractive graphics. These features should be consistent with streetscape themes identified later in this plan.
- Maintain bicycle racks on RapidRide buses.

STRATEGIES: PEDESTRIAN TRANSPORTATION

- Whenever possible, separate sidewalks from Mt. Rushmore Road with a parkway strip. Separation should average at least 6 to 8 feet from the back of the curb, although this is not possible in every instance. Curved sidewalk alignments should be used in some places to create a more informal character.
- Use consistent sidewalk design features along Mt. Rushmore Road, designed for safety and providing visual and functional continuity. Surfaces should be concrete with a 5-foot minimum width, and a contrasting safety strip where adjacent to the back of curbs. Special surfaces should be focused at intersection and mid-block nodes, and may include ADA compliant textured or color-conditioned concrete. Finer concrete scoring patterns also can add contrast and define amenity areas.
- Replace sidewalks and intersection cuts that do not comply with ADA standards.
- Provide well-defined crosswalks at signalized intersections and at strategic points separated from intersections. Mid-block crosswalks should use an offset design at refuge medians to maximize visibility and encourage greater motorist caution. A predictable crosswalk pattern will manage traffic speeds and reduce the barrier effect of Mt. Rushmore Road.
- Use consistent materials to define crosswalks. Surfaces may include stamped or patterned concrete, colored concrete, or a contrasting scoring pattern. Colored crosswalks must be separated from the detectable warnings by non-color added curb and gutter. Level of detail and type of materials should be consistent with other paving materials, and will vary depending on project budget. Use speed tables, a slight elevation of the crosswalk above the paving surface with a very gradual vehicular incline in the street, on cross streets to slow traffic and define the transition between the commercial and residential environments.

Development and Neighborhood Environment

FUNCTIONAL OUTCOMES

- Provide development parcels with adequate depth to permit quality development.
- Define the streetscape with landscaping and buildings rather than parking lots.
- Use development opportunities, including excessively large parking lots, vacant lots, and redevelopment of obsolete uses, effectively to create a healthy mixed use development pattern along Mt. Rushmore Road.
- Provide convenient parking to serve existing and future corridor development, while reducing the dominance of parking on the street environment.
- Protect the integrity of surrounding neighborhoods by preventing unmanaged encroachment of non-residential uses into residential areas and limiting negative environmental and operational effects.

STRATEGIES: LAND USE MANAGEMENT

Establish and implement a land use plan for the Mt. Rushmore Road corridor and surrounding neighborhoods. Map 3.2 illustrates a basic Future Land Use Plan while Map 3.3 presents a framework for land use decisions in the study area. Land use categories in Map 3.2 include the following:

» Central Business District: The high density core of Rapid City, with permitted uses that include and encourage a mix of retail and service commercial, offices, and residential development. Urban form in this area should encourage a strong street orientation, multi-story construction, and vertical use mixing when feasible.

» Public: Sites used exclusively for major public buildings or other public facilities such as parks.

» Office Commercial: Areas principally used for professional, service, or financial offices. Retail or service commercial into these areas, but should not be located in free-standing buildings and should not exceed 20% of the gross floor area of any single unified development. High density residential uses may also be included within an office commercial use area. Areas indicated as office commercial with a PCD require approval of a specific development plan for new projects.

» General Commercial: Areas permitting single purpose retail and service commercial land use, office uses, and mixed use developments. Most existing development is in free-standing buildings with individual parking. However, this plan proposes creating a Mt. Rushmore Road special development district, including design guidelines, outlined below, that reinforce the goals of this plan. Areas indicated as commercial with a PCD require approval of a specific development plan for new projects. Except for larger scale existing projects, the Future Land Use Plan limits the general commercial category to a corridor defined on the west by the alley between Mt. Rushmore and 9th Street and on the east by a line approximately 200 feet east of Mt. Rushmore. Any expansion of commercial use to the east or west must have full frontage along Mt. Rushmore Road.

» Residential: These land use categories, reflecting different densities, are devoted to single-use residential development. Low-density residential includes single-family detached development at urban densities, while low-density residential II provides for large-lot detached houses. Medium-density residential provides for small-lot single-family detached, attached, and

townhome residential. High-density residential permits multi-family development and other housing forms. Areas indicated as residential with a PRD designation require approval of a specific development plan for new projects.

STRATEGY: MT. RUSHMORE ROAD SPECIAL DEVELOPMENT DISTRICT

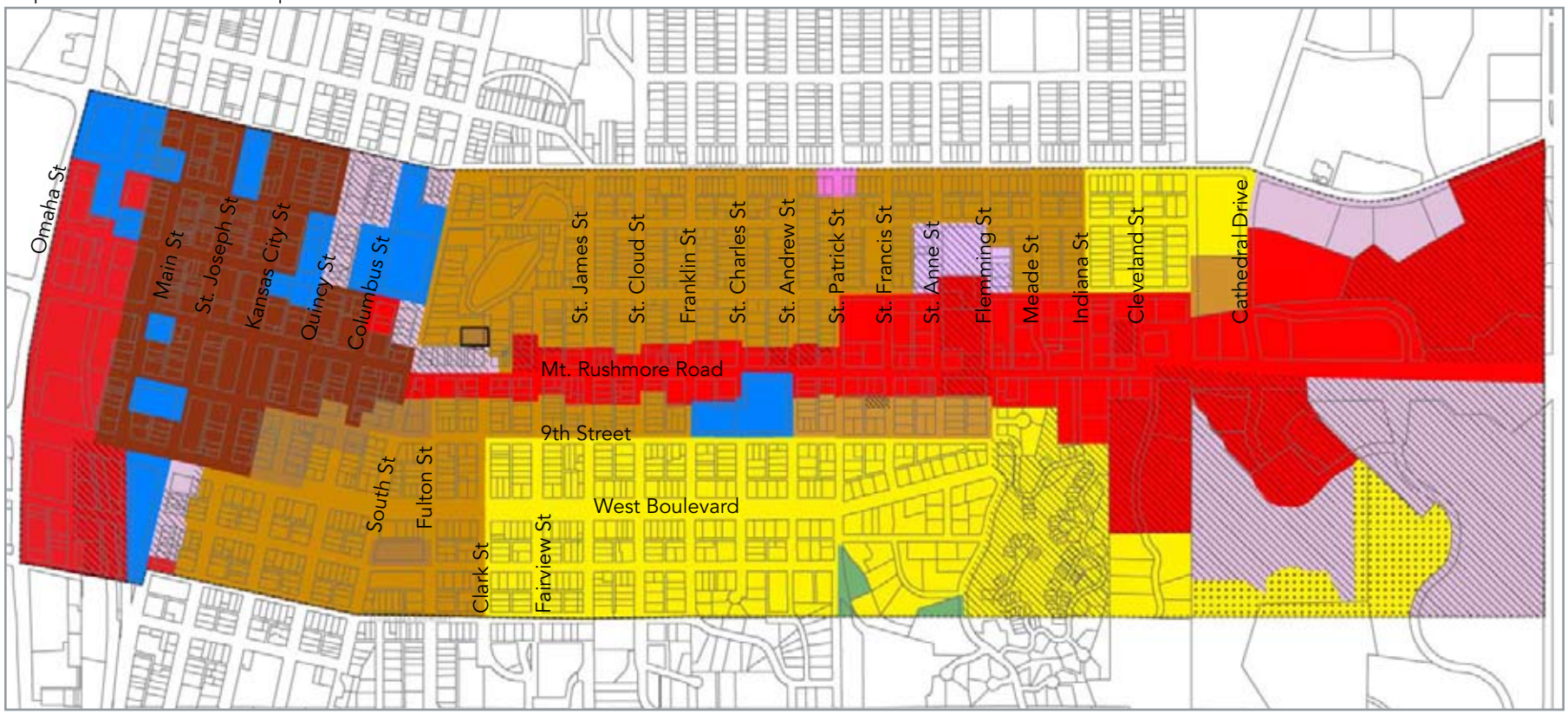
- Adopt a Mt. Rushmore Road Special Development District as a zoning overlay that provides special regulations used in combination with base districts along the corridor. The overlay district should apply to the area between 7th Street and 9th Street, as indicated in Map 3.3. The district concept is designed to reinforce the urban character of the corridor itself, and provide strict controls for expansion of non-residential uses to the east and west of Mt. Rushmore Road.

STRATEGY: DESIGN STANDARDS

- To maintain and strengthen the urban character of the Mt. Rushmore corridor, the overlay district should include specific design standards for non-residential uses. These standards should:
  - » Encourage building locations that are closer to the street and are not separated from the street or sidewalk by large parking areas.
  - » Encourage parking locations and parking lot design that limit the amount of parking directly fronting along public streets, including Mt. Rushmore Road.

  - » Require a clear, safe, and defined path from public sidewalks to the primary entrance of adjacent buildings.
  - » Provide new urban landscaping requirements that require internal parking lot landscaping, ceilings on the permitted percentage of impervious surfaces, and establish a minimum percentage of land immediately adjacent to public right-of-way lines that must be landscaped.
  - » Establish sign and street graphic standards for the Mt. Rushmore Road corridor that emphasizes business identification signage at or near the ground plane, and provides an optimum balance between the need to communicate and urban design considerations.

Map 3.2: Future Land Use Map



STRATEGY: DEFENSIBLE EDGES

The future land use plan and the overlay district should provide strict controls over the expansion of non-residential uses into neighboring residential areas and limit incompatibilities and conflicts between adjacent land uses. Plan implementation should establish defensible edges and transitions between the commercial character of the arterial corridor and neighboring residential neighborhoods.

On the west side of Mt. Rushmore Road:

- Commercial uses should generally be limited to the area between Mt. Rushmore Road and the parallel alley to the immediate west. On blocks without a parallel alley, this potential limit extends to a line approximately 200 feet west of the property line. All development in this area must have full, direct frontage along Mt. Rushmore. Map 3.3 illustrates the limit of commercial development on the west side of Mt. Rushmore.
- High-impact elements such as loading and service areas must be screened to prevent visibility from adjacent residential areas. On blocks without a parallel alley, all commercial development that expands beyond its current extent to the commercial development limit must provide a minimum of 20 feet depth of continuous landscaping along its residential edge.

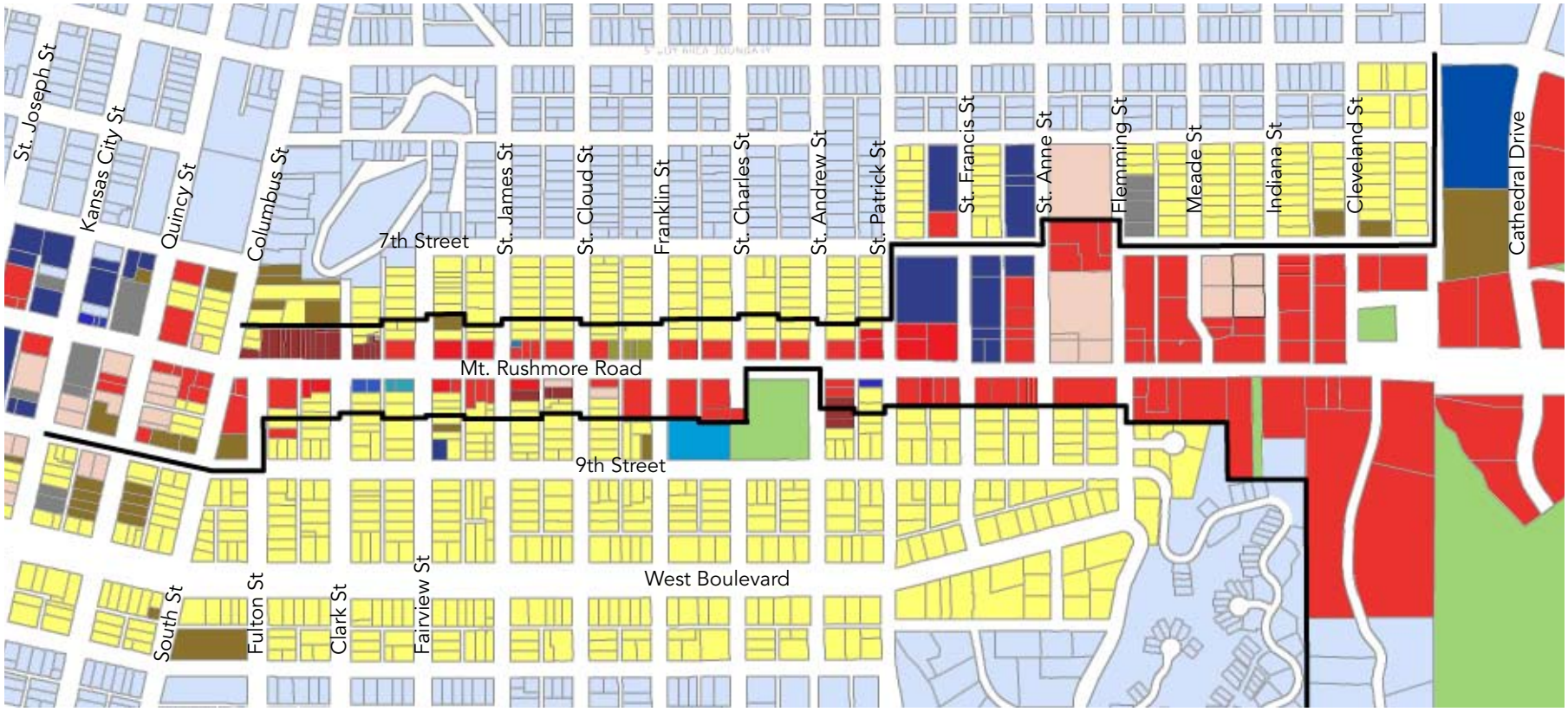
On the east side of Mt. Rushmore Road:

- Commercial uses between Fairview and Saint Patrick should generally be limited to the area between Mt. Rushmore Road and 200 feet east of the right-of-way line. All development in this area must have full, direct frontage along Mt. Rushmore South of Saint Patrick, the limit of commercial development generally extends east to 7th Street. Map 3.3 illustrates the limit of commercial development on the east side of Mt. Rushmore Road.
- High-impact elements such as loading and service areas must be screened to prevent visibility from adjacent residential areas. All commercial development that expands beyond its current extent to the commercial development limit must provide a minimum of 20 feet depth of continuous landscaping along its residential edge.

STRATEGY: COMPLIANCE WITH HISTORIC DISTRICT REQUIREMENTS

- Any new development within designated historic districts must comply with all design and building preservation requirements of the district. Elements of the historic district should be incorporated into projects that are directly adjacent to and have a visual effect on historic districts.

Map 3.3: Defensible Edges (with Existing Land Uses shown)



STRATEGIES: PARKING

- Replace on-street parking north of Wilson Park by converting some local cross streets to a "parking street" concept between Mt. Rushmore Road and the parallel ***west alley.*** This concept provides convenient parking for businesses in the mixed use segment of Mt. Rushmore Road and discourages unwanted traffic from entering the West Boulevard residential district. Its features include:

  - » Perpendicular parking on cross streets protected by landscaped curb extension nodes at the Mt. Rushmore Road intersections. Existing mature trees in parkway strips converted to parking use should be preserved.
  - » Curb extension nodes immediately west of the alley to define the transition to residential districts and narrow the road opening at these points. The street channel between these curb extensions should be a contrasting and textured surface that tends to slow traffic, and may include a speed table to reinforce the transition.
  - » Neighborhood gateway features on the neighborhood mixed use nodes. The nodes may incorporate "green" features to manage stormwater, such as curb breaks and channels, landscape beds, and rain gardens. They may also for tree plantings, street furniture, interpretative graphics and public art.

- Provide necessary but not excessive off-street parking along the Mt. Rushmore Road corridor.

- Redevelop excessively large parking lots with new buildings and development, landscaping, or sustainable site features, such as stormwater management amenities.

- Redesign existing parking lots to provide clear circulation ways, improved landscaping, and clear pedestrian paths to consumer businesses from the street realm.

STRATEGIES: DEVELOPMENT

- ***Utilize development opportunities effectively and consistently with the strategies presented by this plan.*** These sites typically include unused areas of large parking lots, vacant lots, and obsolete or underused commercial buildings. Specific redevelopment sites include:

- Safeway Parking Lot Site. The western edge of this large parking lot in front of Safeway receives little use. As part of a parking lot redesign and upgrade, this area should provide a new, street-oriented commercial pad site.

- Mixed Use Zone. Many single-family homes in this zone have converted to office or commercial uses, a trend that will continue. The row of finely scaled houses elevated above street level on the east side of Mt. Rushmore Road between South and Clark Streets presents a special redevelopment opportunity. The City should adopt appropriate design guidelines to ensure that projects in this area respect the scale and scale of the surrounding neighborhood. These guidelines should address the following issues:

The parking street concept uses landscaped curb extensions to mark the transition between the commercial environment of Mt. Rushmore Road and the residential West Boulevard district.

  - » *Building footprint.* For new buildings, the maximum footprint should be related to the footprint of houses in the surrounding area. For conversions of existing structures, additions should be limited to a specific percentage of the pre-existing footprint, to prevent new construction from overwhelming the scale of the original building.
  - » *Parking location.* Parking should not be located in the front yard between the building facade and the street.
  - » *Details and materials.* Residential features such as porches, gables, and other details should be preserved in existing buildings and expressed in new construction. Original materials should be preserved and restored with conversions of existing buildings. New buildings should use facade materials that have precedents in the residential neighborhood.

Transitional office uses and residential scale. Office restoration of an historic house has conserved critical details.

Transitional office uses and residential scale. Office conversion and signage maintain the scale of the surrounding neighborhood.

Top: Neighborhood connections from Mt. Rushmore Road should be pleasant with overstory trees and planting.

  - » *Signage*. Signs should be residential in scale, typically no greater than 16 square feet. Even relatively small signs can overwhelm small elements found in the mixed use zone.

- Vacant sites and deteriorating residential areas behind and east of Mt. Rushmore Road between South and Clark Streets. This site is uphill from the residential row described above.

- ***Wilson Park Area.*** Some residential buildings along the north side of Wilson Park have converted from single-family residences to office and commercial uses. While this trend is likely to continue, any new development should respect residential scale and historic district restrictions.

- ***Commercial and office sites between Indiana and Meade Streets, from Mt. Rushmore Road to 7th Street.*** While some of this block is built up, vacant areas and excessively large parking areas may be redeveloped to provide a more efficient and higher quality project design.

- ***Other vacant lots and open spaces.*** Several scattered vacant sites along Mt. Rushmore Road may be available for redevelopment. Vacant sites include:
  - » A vacant lot located midblock between St. Charles and Franklin Streets, next to the car wash. A video billboard on site rests on an otherwise overgrown lot.

STRATEGIES: NEIGHBORHOOD CONNECTIONS

- ***Define connecting streets between adjacent residential neighborhoods and the Mt. Rushmore corridor.*** These logical connections may include South Street, Franklin Street, St. Andrew Street, St. Patrick Street, and Flormann Street.

- ***Along connecting streets, provide design amenities that suggest the quality of the neighboring residential areas and historic districts.*** These features include overstory tree planting and West Boulevard-style street lighting. These and other features reinforce the relationship between the commercial corridor and its residential constituency.

- ***Complete and implement a master plan for Wilson Park that makes the park a stronger common space for both the highly public environment of the arterial and the quieter, more private environment of residential neighborhoods.*** This program also includes a midblock pedestrian crossing to make Wilson Park more accessible to neighborhoods east of the Mt. Rushmore corridor.

Visual Environment

A successful economic strategy for Mt. Rushmore Road conceives of the corridor as both an environment and a product that competes in the marketplace. Successful urban design and theming programs grow out of the special characteristics of the urban context. Competitive products present identities and expectations that persuade consumers to buy them. Similarly, whether they want them or not, urban districts have identifiable "brands" – a set of expectations that can guides investment and buying decisions. For example, the image of West Boulevard is highly positive, deservedly establishing itself as a very desirable place for homeowners. On the other hand, Mt. Rushmore Road to some has the image as an older "product" that may not be keeping up with the competition. Establishing Mt. Rushmore as an attractive and evocative urban district is inherently good from the perspective of community appearance. More importantly, though, it is sound economic strategy, because it recognizes the importance of product enhancement in a competitive environment. This section presents an urban design program designed to create an enhanced product image for this important corridor.

FUNCTIONAL OUTCOMES

- Use a strong and coherent physical design image as a basis for economic revitalization and investment along Mt. Rushmore Road. Create a design environment that establishes Mt. Rushmore as a preferred route for leisure travelers and a destination for local and regional customers.

- Base improvements in the corridor on criteria of good streetscape design. These criteria include:
  - » A unified relationship between the public/pedestrian realm and the private domain.
  - » Clear and comfortable edges between pedestrian and motor vehicle domains.
  - » A logical use and sequence of trees and other street landscaping, furniture, paving, lighting, and other streetscape elements.
  - » Attractive and functionally appropriate street lighting that reinforces a corridor image and minimizes extraneous light.
  - » Use of materials, street furniture, and other features that is internally consistent and evokes the character of the corridor.
  - » Attractive and durable materials reflecting functional and aesthetic needs.
  - » Scale that frames the experience of users and is appropriate to how they will interact with the environment.

- Establish a unified theme for the corridor, expressed subtly through elements of the design. Traditional themes for the Mt. Rushmore region are the Black Hills environment, the presidents, and Native American history and culture. These themes are reflected in different ways around Rapid City and should be expressed in new ways along the Mt. Rushmore Road corridors.

DESIGN APPROACH

The visual concept for Mt. Rushmore Road draws on features and themes specific to Rapid City and uses them creatively and coherently along the entire study corridor. This approach is based on three qualities that distinguish this region and corridor:

Natural Beauty

- *Landscape.* The unique landscape of the Black Hills region defines the entire Rapid City region. The land forms and a relatively narrow palette of plant material results in dramatic, sweeping gestures of color and texture.

- *Horizon.* Long, distant views of the horizon are characteristic of the region and are found along the Mt. Rushmore Road corridor. The design approach should enhance these views.

Development Character

- *Architectural Styles and Details.* Materials and architectural precedents in Rapid City's built environment include art deco and arts and crafts styles, and the use of wood, terra cotta, and stacked stone. Corridor enhancement structures and features should express this distinctive combination of style and material.

Natural + Development Beauty

- *Presidents.* The Presidential theme is most commonly associated with Rapid City because of the city's status as the gateway to Mt. Rushmore National Memorial. Theming on Mt. Rushmore Road should creatively express this association, complementing but not repeating the literal nature of downtown's presidential sculptures or the monument itself.

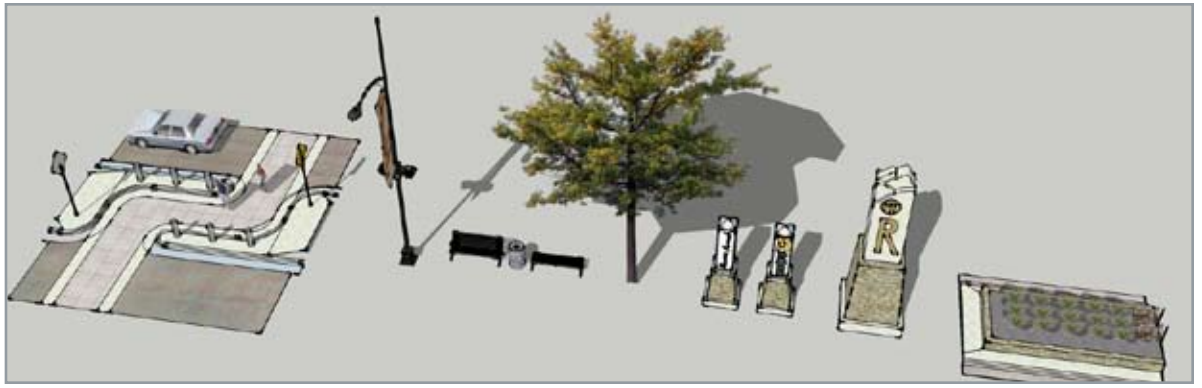
- *Public Art.* Rapid City's public art program includes the iconic bronze sculptures of the presidents placed at the corners of its downtown streets. The program touches the Mt. Rushmore Road corridor at Main and St. Joseph Streets. The human scale of these installations allows viewers to relate and almost humanize them. Visual concepts for the corridor should complement this successful public art project.

STREETSCAPE

Mt. Rushmore Road should provide its users with a unified, comfortable, and vibrant public environment, whose streetscape features are both functional and aesthetically successful. The existing corridor contains many opportunities to improve the street environment by building on its functional role and physical character.

- *Safety and Accessibility.* A top priority of the streetscape design program is, in fact, functional – creating a safe and comfortable environment for motorists and pedestrians, especially for people with disabilities. Issues along the corridor include unmanaged vehicle access creating traffic conflicts, narrow and poorly defined sidewalks, infrequent and difficult pedestrian crossings, barriers to accessibility, and poor paving conditions.

- *Quality Design and Execution.* The downtown public art program and the Wilson Park/West Boulevard signage system are thoughtfully conceived and well executed features. Proposed improvements to the corridor should follow these examples.



STREETSCAPE FAMILY AND ZONES

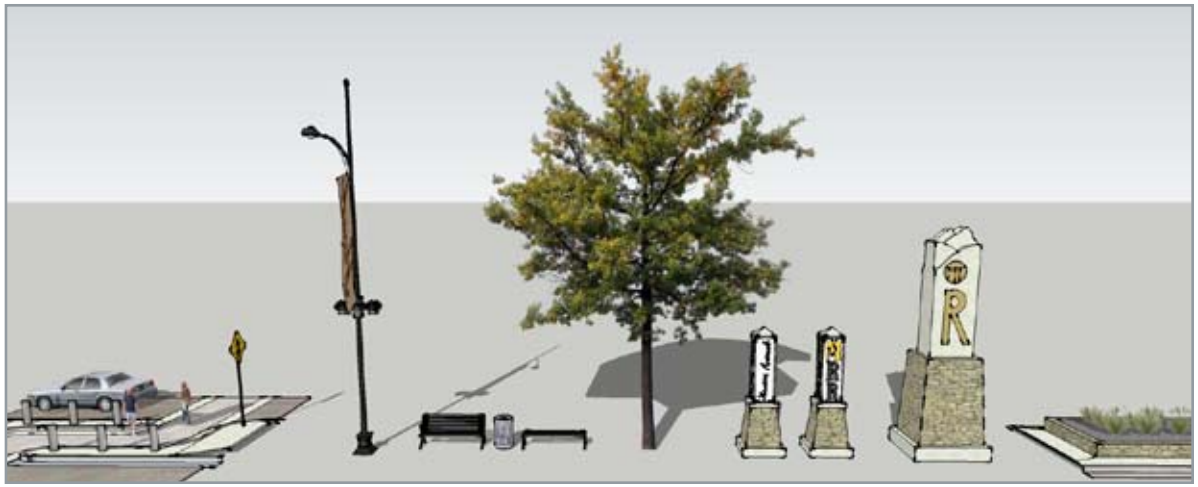
Mt. Rushmore's new streetscape should use a harmonious family of individual elements. The image to the right identifies seven key components, placed within two zones in the street channel: the center median, separating opposing traffic streams; and the parkway, the area between the curb and right-of-way line.

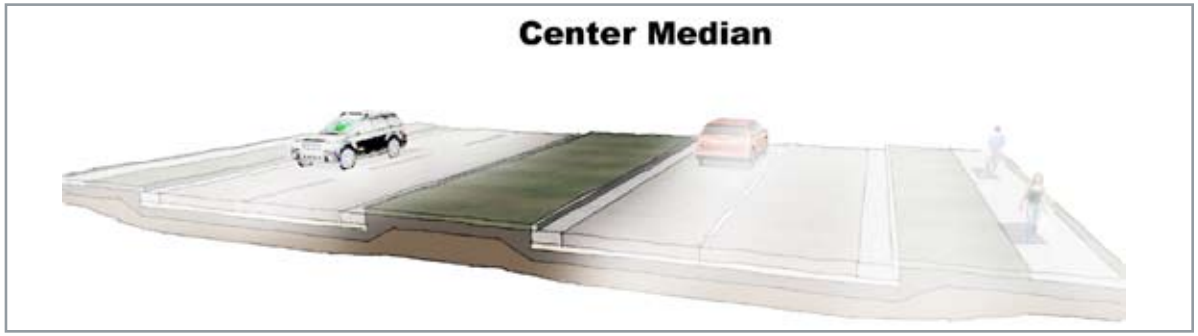
Center Median Zone

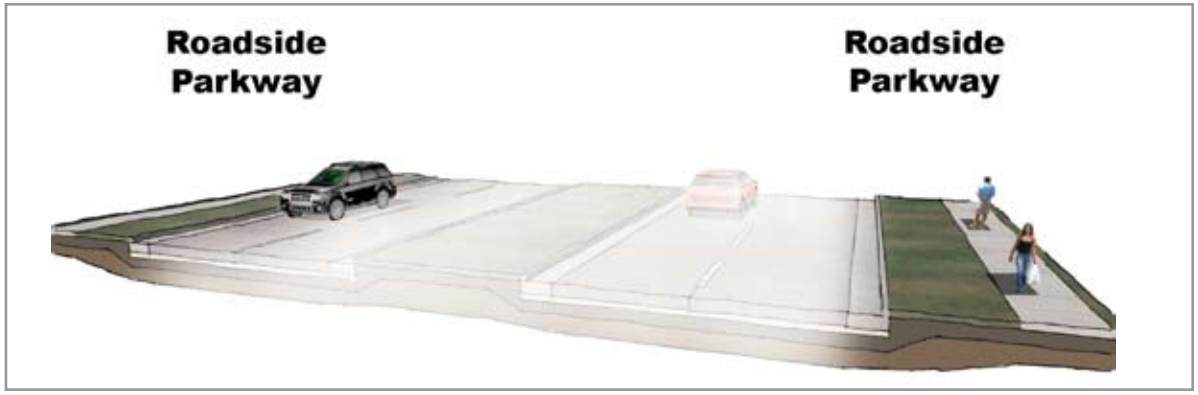
- *Gateway Features.* Large-scale stone icons.
- *Corridor Markers.* Medium-scale, internally illuminated presidential signature features.
- *Mid-Block Pedestrian Crossings.* Enhanced crossing utilizing the proposed median.
- *Raised Planters.* Stone planters.
- *Landscape.* Simple, hardy, and largely native elements with color and texture.

Roadside Parkway Zone

- *Lighting and Banners.* Functional and beautiful.
- *Street Trees.* Stately and placed to frame views.
- *Street Furnishings.* Durable and high quality.
- *Landscape/Public Art.* Unique and memorable.
- *Signage.* Used sparingly and effectively.







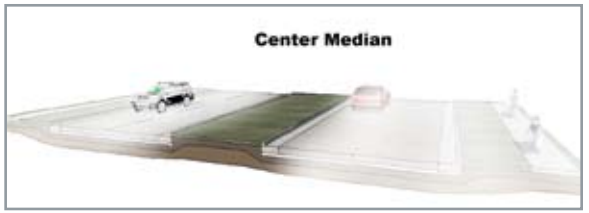
CENTER MEDIAN ZONE

Gateway Features. Travelers experience a sense of arrival as they enter the urban segment of Mt. Rushmore Road. This experience presents an opportunity to associate the corridor with its significance as an urban district and as a portal to Mt. Rushmore National Memorial. Gateway features will be 20 to 25 feet high and will use native stone and plant material within a raised median planter. A large "R" or other community icon would be carved into the stone monolith. The top stone could be chiseled to shape, a technique used to form the images of Mt. Rushmore, and the tip could be layered to reflect the Black Hills.

Corridor Marker. The corridor should establish and reinforce a distinctive, high quality brand. The concept proposes the use of presidential signatures on a vertical stone and metal marker, lighted in silhouette by night. These markers will unify the street environment, and complement the National Memorial and downtown's presidential sculptures in a new and creative way. These elements would have different and compelling qualities by day and night.

CENTER MEDIAN ZONE (...CONTINUE)

Mid-Block Pedestrian Crossings. Crossing Mt. Rushmore Road is challenging for pedestrians. Signalized intersections provide protected crossings, but crossing long segments between signals is very difficult. These proposed crossing uses designs tested by recent federally-funded demonstrations and European experience. Medians provide safe haven, requiring pedestrians to cross only two lanes of single directional traffic at a time. An offset path increases visibility and allows pedestrians to make eye contact with approaching motorists. Even without signalization, many experts find this configuration safer than uncontrolled intersection crossings.



Above: Offset median crossing for Mt. Rushmore Road.

Right: Demonstration pedestrian crossing project in Las Vegas.

CENTER MEDIAN ZONE (...continued)

Raised Planters. Raised planters in roadway medians can control vehicular and pedestrian circulation, enhance safety, and protect plants, trees, and other features from damage by errant vehicles and harmful roadway pollutants. The Mt. Rushmore Road streetscape should use these elements at key locations. Native stacked stone is set 2 feet behind the curb, with a side wall about two feet above the median surface.

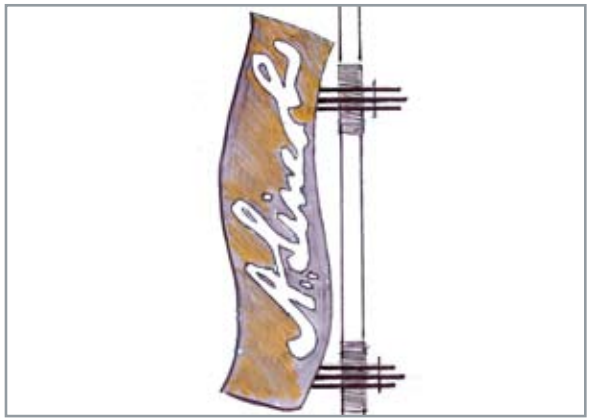
Landscape. The raised planters provide a highly visible plinth for the presentation of native grasses and perennials. A roadway median is an extremely harsh environment, stressing almost every form of planting. Raising the plant bed provides some protection from snow storage, pollutants, and direct vehicular damage. Since no irrigation is recommended, plant selection is critical to success. Although few plants are suited to this environment, many success stories exist throughout the country. The final design process will require close consultant/client collaboration to address s long term considerations.

ROADSIDE PARKWAY ZONE

Lighting. High efficiency LED roadway and pedestrian lighting is rapidly becoming feasible and cost effective and should be considered for installation. Poles and fixtures should be simple and functional, and poles should accommodate pedestrian-scaled, sidewalk side fixtures. Detailed lighting calculations and studies will determine the exact spacing of roadway standards and the need for supplemental pedestrian light poles and fixtures between the roadway lamps.

Presidential Banners. Presidents literally left their "mark" on the office with their signatures. The signatures provide both literal associations and an abstract pattern that expresses the presidential theme and celebrates all 42 signatures in a new and colorful way. Banners or panels would be designed as unrolled parchments, mounted to streetlights or poles.

Many communities and districts use banners as a cost effective way to reinforce a brand or message. Banners may be either permanent or change with new arrangements or special messages. Advances in materials and fabrication are leading to greater use of permanent panels.



ROADSIDE PARKWAY ZONE (...continued)

Street Trees. Mt. Rushmore Road today lacks a significant street tree canopy. Studies indicate many benefits of street trees, including traffic calming. Currently, overhead utilities limit the placement of trees on the west side. If lines were relocated, large canopy species should be integrated into the roadside parkway between lighting and curb cuts.

Signage. Signs on Mt. Rushmore Road include flashing lights, electronic marquees, and backlit panels. Computerized electronic billboards are receiving greater use, but present significant problems, including neighborhood impacts, conflicts with traffic signals, and the ability to distract motorists and hold their attention longer than conventional signs. New sign regulations for the corridor should be developed that:

- Provide a maximum sign budget for each property based on the amount of frontage along Mt. Rushmore Road.
- Encourage low-level, ground or monument signs over high pole signs.
- Restrict placement of conventional and electronic billboards. Future use of billboards, especially video billboards, should be prohibited.

ROADSIDE PARKWAY ZONE (...cont)

Commercial signs along Mt. Rushmore Road should maintain pedestrian scale while communicating to the motorist by reducing the size of signs and selecting quality materials.

Street Furnishings. Benches, bike racks, and trash receptacles both serve users and add scale to the street. Benches should be located at places that attract pedestrians, such as mid-block crossings, curb extension nodes, key intersections and transit stops. Bike racks should be located in the park and near major destinations. Design and materials should be durable and consistent with other city installations.

Landscape and Public Art. The city's "outdoor gallery" of landscape and art includes sculptures, mosaics, wall art, and other installations designed for and placed in public environments.

Currently, Rapid City's public art program is concentrated downtown, but should extend into the Mt. Rushmore and even West Boulevard corridors. Future installations should:

- Maintain sight lines for pedestrians and motorists.
- Avoid compromising the intended use of public spaces.
- Consider maintenance needs, safety considerations, and replacement costs in the design process and before installations.
- Include landscaping, fencing, brickwork, glasswork, gates, fences, lighting, painting (murals), sculpture, seating, lettering, signage, computer generated, water, use of color, and crafts and artifacts. The fencing behind the former Albertson's also could provide a canvas for art.
- If permanent, use durable materials that will maintain their appearance and integrity over time.

Natural Environment & Sustainable Design

A successful roadway environment should conserve the natural environment to realize social, economic, and environmental benefits for the community. Long-term sustainability depends on minimizing environmental effects and repairing earlier impacts. A sustainable Mt. Rushmore Road corridor will use state-of-the-art stormwater management practices, energy efficient lighting, and indigenous materials, and encourage green transportation modes. This section discusses proven methods that will improve the environmental performance of new development on private and public property.

STRATEGIES: GREEN INFRASTRUCTURE

Green infrastructure systems reduce damage to rivers and streams by using best management practices (BMP's) or integrated management practices (IMPS's) in building and site design. Disconnecting the flow from storm sewers and re-directing runoff to natural systems such as rain gardens, bioswales, biocells, filter strips, native plantings and landscape enhancements allows stormwater to infiltrate into the ground, reviving the existing aquifers. Natural systems also remove harmful pollutants and suspended solids from parking lots, streets, and roadways, improving the ecological integrity of rivers and streams. A guide to the most appropriate best management practice follows.

Rain Gardens. A rain gardens is a shallow depression with an amended soil mixture composed of sand, topsoil, and compost, usually planted with native species that remove pollutants from stormwater. Rain gardens are not a water conveyance system. Generally these cells should be designed to capture 90% of all rain events (1.25") or smaller. Since rain gardens are designed to infiltrate and cleanse water, all surface water should infiltrate within seventy-two hours. Soil tests should be completed prior to locating rain gardens.

Bioswales. In contrast to rain gardens, bioswales are an infiltration and conveyance system - usually designed as part of an overall system that outlets into a naturalized detention basin.

Bioretention Cells. Bioretention cells are a naturalized depression that slows stormwater runoff, releasing it at a slower rate to discourage erosion and reduce turbidity. Typically bioretention cells require soil amendments of compost and topsoil.

Naturalized Detention Basins. Naturalized detention basins are shallow wetlands or open water ponds that contain a natural buffer that temporarily stores runoff. Buffer strips increase the water quality of these wetlands by allowing the water to infiltrate, cleanse, cool, and recharge existing hydrologic systems. Plant selection should be limited to native aquatic and wet mesic plants.

Permeable Pavements. Permeable pavements provide hard surfaces that allow water to pass through, infiltrate and recharge groundwater aquifers. These often eliminate the need for traditional stormwater management infrastructure such as concrete pipes, curb inlets, and beehive drains. These pavements are laid on an open graded crushed rock without fines.

Specific types of porous pavements include:

- Porous asphalt and porous concrete, open-graded surfaces with a reduced quantity of fines. They allow water to flow through the surface texture into the sub-base where it is stored, conveyed and infiltrated.

- Permeable pavers, pre-cast concrete unit pavers that typically have a joint filled with crushed clean rock chips, allowing water to flow through into the sub base.

Green Roofs. Green roofs (also known as roof top gardens, and vegetated roof systems) are on-site systems designed to retain, slow, cool, and cleanse rainwater falling on the roof of a building. Green roofs can be retrofitted for existing buildings and should be encouraged in new developments. Typically the roof tops are planted with drought tolerant plant species in an engineered soil. Rooftop soil is lightweight, containing a large quantity of pumice (or similar material) and compost that holds water in the medium and drains slowly. This allows water to evaporate into the atmosphere, reducing peak flows in urban streams and mitigating the urban heat island effect. Different types of green roof systems include:

- Extensive green roofs, typically designed with 2-4" of engineered soil, and planted with only the hardiest vegetation.

- Semi-intensive green roofs, usually with 4-8" of engineered soil. When an engineered soil medium of six inches or more is used, choice of plants dramatically increases. Ornamental grasses and many herbaceous perennials may be included in the planting palette.

- Intensive green roofs usually have more than 8" of engineered soil. These are often plazas and other areas carrying a heavy design load.

Green roofs also protect the roof, insulate, and enhance HVAC (Heating Ventilation and Air Conditioning) systems. Green roofs have been proven to triple the lifetime of the roofing system, cutting down on long term building costs while adding an ecological benefit. The insulating capabilities reduce heat loss and cool air before it enters the HVAC systems.

Curb Cuts. Curb cuts help disperse water that falls on a parking lot or road. A curb cut allows the water to exit the roadway in numerous locations, directing water into a bioswales or rain gardens. Other elements such as rip-rap or rigid polymer mats with voids may also be used. These materials are used to transport water across the surface of the ground, limiting infiltration. When sidewalks exist within the adjacent right of way, a trench grate should be used to allow water to flow under through the walk.

Level Spreaders. Level spreaders are designed conveyance systems constructed across a slope parallel to the grade. They consist of a linear structure built into the ground that disperses the concentrated flow over a vegetated buffer or forested riparian area. They spread the concentrated water over a wide enough area to prevent erosion, and remove pollutants and suspended solids from nearby runoff by promoting infiltration and absorption.

The Mt. Rushmore Road Corridor can be a model for sustainable roadway and adjacent development design in the Rapid City area. Low impact development practices can help restore, heal and enhance native ecosystems. These practices will also reduce pollution, discourage erosion, mitigate the loss of wildlife habitat, and help restore the native landscape.

These techniques can also reduce lifecycle costs of development. Capture and treatment of 90% of rain events greatly reduces the need for conventional (and often costly) water detention facilities and stormwater infrastructure.

STRATEGIES: BEST MANAGEMENT PRACITICES (BMP) DESIGN APPROACH AND LOCATION

Location and design of BMP's should incorporate all aspects of the site. Considerations include location within the watershed (an area of land that drains to a specific point), land cover characteristics, soil infiltration rates, local regulations, community acceptance and maintenance.

Location and design of a system of integrated management practices requires a stormwater treatment plan based on a specific target. Careful consideration should be taken to calculate and size the BMP based upon the water quality volume calculations. These calculations should be performed for each system or best management practice. A complete design manual is available from the City of Rapid City's website http://www.rcgov.org/pubworks/stormwater/stormwater_homepage.htm.

STRATEGIES: MAINTENANCE

Maintaining green infrastructure systems is just as important their planning and location. Best Management Practices are not maintenance-free for the owner, although their maintenance costs are typically lower than those of traditional "gray" infrastructure. A maintenance plan should be developed with the owner to ensure the proper treatment of stormwater along with recommended operating procedures and schedules. For more information, property owners and designers are encouraged to review the U.S. EPA National Pollutant Discharge website at http://cfpub.epa.gov/npdes/home.cfm?program_id=6 .

STRATEGIES: NATIVE LANDSCAPING

Plant selection in the public environment should reinforce community themes and use local materials. Consistent palettes of plant material used within BMP's, planters, streetscapes and other locations can strengthen the composition of individual elements in the public realm. Rapid City's semi-arid climate can be very harsh, and plants should be used with proven performance. The following section recommends a plant palette for the corridor.

Street Trees. Street trees planted at regular intervals can define the street and provide shade. Good locations in the Mt. Rushmore concept include intersection bump-outs, mid-block nodes and private property edges where two conflicting land uses occur. While installations on existing private sites are voluntary, the city should provide incentives for tree planting and new landscape standards should require street trees in new developments. Careful plant selection should be avoid irrigation to the greatest degree possible.

Because Mt. Rushmore Road is a state highway, tree planting in the right-of-way must meet Lateral Obstacle Clear Zone (LOC) standards set by the South Dakota Department of Transportation. LOC standards vary depending on roadway design and should be verified according to Chapter 10 of the South Dakota Department of Transportation roadside design documents.

Planting trees reduce the urban heat island effect by shading sunlight from hard surfaces. Deciduous trees planted along the south and west sides of buildings can reduce energy use by blocking sunlight in the summer while allowing it to penetrate the building's windows in the winter.

Appropriate street trees for the Mt. Rushmore environment include:

- *Honey locust (Thornless).* Honey locust trees are generally grow to be about 50' tall and tolerate urban conditions well. They have good fall color and are very resistant to pests. This tree also provides filtered shade on a building façade or landscape, does not attract birds, and have small leaves that decompose easily in the autumn.

- *American Linden.* American Lindens are large trees known for pyramidal form, and are a popular choice for boulevard plantings. Typically these trees will grow to about 60' tall and should be planted at 40' on center.

- *Hackberry.* Hackberry is a native tree to South Dakota and is both very hardy and drought resistant. Typically these trees will grow about 60' tall and should be planted at 40' on center.

Shrubs. Shrubs along major roads should tolerate harsh conditions. Snow and salt create especially difficult conditions. Salt tolerance shrubs should also be resilient and appropriate to their surrounding land use contexts. Shrubs appropriate to the Rapid City area include:

- Leadplant, a tolerant shrub with lovely purple flowers. These shrubs can accent pedestrian crossings and significant intersections.
- Spireaea, a drought and salt tolerant plant that grows well in many different soil types.
- Western serviceberry (dwarf varieties)
- Red-twig dogwood

Native Grasses. Native grasses slow stormwater runoff and add color to the streetscape. Grasses appropriate to the Rapid City area include but are not limited to:

- Little Bluestem
- Sideouts Gramma
- Prairie Dropseed
- Switch Grass

Forbs. Forbs add color and life to the roadway. Their presence is limited and should be expanded upon. Forbs suggested along Mt. Rushmore Road, include:

- Purple Coneflower
- Grey Coneflower
- Yucca
- Liatris

STRATEGIES: LIGHT CONTROL & DARK SKIES

- Provide a level of lighting appropriate for safety, visibility, and comfort, but avoid excessive light levels. Effective outdoor lighting provides comfort and security and encourages pedestrian activity. Proper lighting in urban areas promotes vehicle safety and reduces shadows that keeps motorists from seeing pedestrians. However, excessive light produces an unpleasant environment and wastes energy.

- Utilize street lighting sources that direct light to the ground plane and minimize extraneous light. The "dark skies" concept focuses light on areas and surfaces that should be illuminated. Outdoor lighting performance should be based on both optics and overall system design, including distribution and functional and aesthetic requirements. At night, light sources themselves should be almost imperceptible. High-performance optics focus the observer's eye on the illuminated surface below the fixture.

- Use lighting that reinforces the theme and character of the Mt. Rushmore Road environment. Street lighting should relate to the streetscape during both day and night. Scale and style contribute to the visual tone of the street. The type of light source also influences energy consumption and sustainability. Efficient light sources can achieve equivalent lighting levels with lower energy use. The spectrum of light also becomes an important part of the nighttime streetscape. For example, high pressure sodium vapor lights are efficient but to some eyes renders colors poorly. Metal halide's white light renders colors and surfaces more realistically and are available in different color temperatures to provide a more "incandescent" appearance.

Development Concept

The vision for the Mt. Rushmore Road corridor and its environs emerges by combining *Goals* and corridor development with the *Environments*. Describing improvements is approached by focusing on six diverse zones, including:

1. Downtown Core
2. Mixed Use
3. Commercial Corridor
4. Services Fringe
5. Historic West Boulevard
6. East Neighborhood

Components for each zone is described by stating the goals and issues then identifying specific improvement projects by the public and private sectors.

- ***Goals.*** A statement of the desirable outcome for the zone.
- ***Issues.*** Key issues that present challenges to the segment.
- ***Public Improvements.*** Describing in more detail, projects or actions that need to be pursued by the community.
- ***Private Investments.*** Projects that could be developed by the private market.


East Neighborhood
Commercial Corridor
Services Fringe
Historic West Boulevard

1. Downtown Core

This area includes the area north of **Columbus Street to the beginning of Interstate 190.**

GOALS

- Establish a gateway to both Downtown and the Mt. Rushmore Road corridor.
- Increase clarity of traffic movements and reduce traveler confusion on arrival to Rapid City.
- Extend the downtown streetscape enhancement program to Mt. Rushmore Road.

ISSUES

1. *Traffic Movements.* The southbound I-190 ramp and US 16 wayfinders align motorists with West Boulevard. US 16 then shifts east along St. Joseph Street to Mt. Rushmore Road. Southbound travelers frequently miss this turn, continuing into the residential West Boulevard Historic District.
2. *Streetscape.* The design of the public environment from block to block is inconsistent and confusing.
3. *Vacant Property/Buildings.* A strategic site on the northeast corner of Columbus Street and Mt. Rushmore Road is vacant.
4. *Utilities.* Major power transmission lines run along alleys between Kansas City Street and Main Street.
5. *Pedestrian and Trail Access.* Omaha Street is a busy corridor that becomes a significant obstacle for pedestrians and cyclists trying to cross between downtown and the community trail.
6. Screening. Vacant sites, fences, parking lots, or back building walls front along Mt. Rushmore Road without screening.

PUBLIC IMPROVEMENTS

- ***Streetscape.*** Streetcsape features presented in the previous section begin along this segment of Mt. Rushmore Road. These features include streetlights, public art, medians, and landscaping.
- ***Presidential Plazas.*** Intersections along Mt. Rushmore Road should accommodate future placement of public art.
- ***Alleyway Utilities.*** If feasible, bury utility lines as they cross Mt. Rushmore Road. The lines crossing between St. Joseph and Main Streets should be a priority
- ***Screening and Omaha Street Enhancements.*** Landscaped screening should be provided along Omaha Street near ACE Home Center and along the rear of the former Albertson's site.
- ***Directional Information.*** New directional information and visual cues should clearly direct visitors to US 16 south.
- ***Pedestrian Crossing.*** A better pedestrian crossing across Omaha Street and near downtown will connect both Downtown and the bicycle boulevard system proposed for the Mt. Rushmore Road planning area to the primary Rapid Creek trail. This greatly increases bicycle and pedestrian continuity.

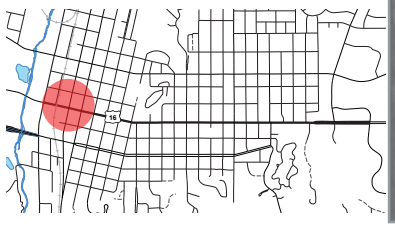
PRIVATE INVESTMENTS

- ***Redevelopment Site.*** The City should encourage productive, street-oriented redevelopment of the vacant site at Columbus Street.

- ***Family Thrift Site Screening.*** The fencing along the rear of the Family Thrift site, facing Mt. Rushmore Road, should be upgraded, consistent with the overall streetscape design.

CORRIDOR LEGEND

- Roadway Lighting
- Signalized Intersection
- Gateway Monument Feature
- Corridor Marker or Public Art Opportunitiy
- Street Tree
- Ornamental Tree
- Bicycle Blvd or Route
- Pedestrian Crossings
- Existing Building
- Proposed Redevelopment
- Speed Table




MAIN STREET
ST JOSEPH STREET

CORRIDOR LEGEND

- Roadway Lighting
- Signalized Intersection
- Gateway Monument Feature
- Corridor Marker or Public Art Opportunitiy
- Street Tree
- Ornamental Tree
- Bicycle Blvd or Route
- Pedestrian Crossings
- Existing Building
- Proposed Redevelopment
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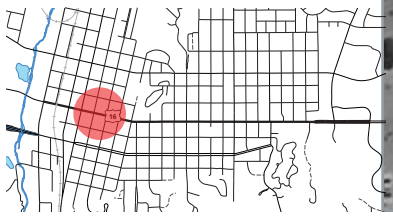



COLUMBUS STREET
SOUTH STREET

Mt. Rushmore Road and Main Street. Possible improvements include a new signalized intersection with a landscaped median. Street trees, signature banners, monuments, and defined crosswalks strengthen the character of the corridor.


THIS IS BUDWEISER
Radisson

2. Mixed Use

This segment **between Quincy and St. Andrew Streets** is the most distinctive part of the Mt. Rushmore corridor, featuring a mix of residential, commercial, and office uses; historic buildings; and a pedestrian-scaled cityscape. This area has some overlap with the Downtown Core and Commercial Corridor.

GOALS

- Encourage adaptive reuse of existing building in coordinated, high quality projects.
- Provide a green cityscape in the transition between Downtown and more automobile-oriented segments to the south.
- Improve traffic management and pedestrian safety.

ISSUES

1. *Parking*. Parking is critical for this urban corridor segment. Off-street parking is inconvenient and not immediately visible, and existing on-street parking increases traffic conflicts.
2. *Deteriorating retaining walls, fencing and railing.*
3. *Cruising*. Night-time cruising , once an issue along Mt. Rushmore Road and in the adjacent West Boulevard neighborhood, has apparently been reduced when northbound left turns off Mt. Rushmore were prohibited.
4. *Street clutter*. Overhead wires and poorly located poles create visual clutter along the street.
5. *Pedestrian movements*. The current sidewalk is narrow and obstructed. Short retaining walls at street level force people to walk in the street and poles mounted in the sidewalk reduce clearance.

PUBLIC IMPROVEMENTS

- ***Raised Landscaped Median with left turn lanes at intersections.*** These medians control unnecessary and sometimes illegal turns and improve the appearance and function of the street.
- ***Streetlights with signature banners.***
- ***New retaining wall and planters and street-level sidewalk between South and Clark Streets.*** This east side sidewalk is elevated above street level by a low retaining wall and is not accessible. Removal of little-used on-street parking allows a generous tree lawn, sidewalk at street level, and new planters. This encourages the mixed use village concept outlined below and enhances both the streetscape and a row of architecturally distinctive buildings.
- ***Cooperative Parking.*** Combining adjacent parking lots increase the supply and efficiency of parking. This will require cooperation among private business/property owners and the City. Redirecting Fulton Street at the Mt. Rushmore intersection discourages possible cruising.
- ***Remove No Left-Turn Poles.*** Removing these installations will reduce visual clutter and confusing signage.
- ***Parking Streets and Replacement of On-Street Parking.*** The half-blocks west of Mt. Rushmore along Clark, Fairview, and Franklin Streets should be converted to parking streets, as described in the previous section. This eliminates the need for on-street parking and provides buffers for adjacent

residential areas. Replacement of on-street parking provides space for landscaping and more comfortable sidewalks.

- ***Clark Street Right-in Right-out.*** A new right-in right-out median could be placed at Clark Street to control turning movements.

PRIVATE INVESTMENTS

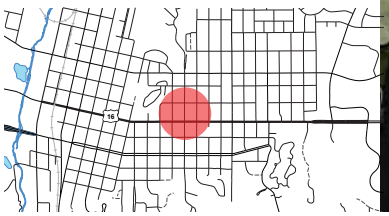
1. *Mixed-Use Village.* The row of historic along the east side of Mt. Rushmore Road between South and Clark should be restored for either continued residential use or new office or commercial uses. This concept would connect the houses with a garden path and provide private parking behind the buildings. Stairways would connect the private and public paths.

2. *Parking Alley.* An improved alley with head-in parking behind the mixed-use village would improve accessibility and efficiency of parking. A slight shift of the alley to the west provides space for a new development project on the south end of the block.

3. *Clark Street Redevelopment Project.* The existing distressed apartment building off Clark Street would be replaced by a new residential project, potentially a new townhouse row with lower-level garages and upper-level walk-outs with excellent views to the west.

CORRIDOR LEGEND

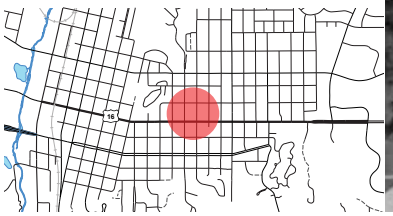
- Roadway Lighting
- Signalized Intersection
- Gateway Monument Feature
- Corridor Marker or Public Art Opportunitiy
- Street Tree
- Ornamental Tree
- Bicycle Blvd or Route
- Pedestrian Crossings
- Existing Building
- Proposed Redevelopment
- Speed Table




FAIRVIEW STREET
ST. JAMES STREET

CORRIDOR LEGEND

- Roadway Lighting
- Signalized Intersection
- Gateway Monument Feature
- Corridor Marker or Public Art Opportunitiy
- Street Tree
- Ornamental Tree
- Bicycle Blvd or Route
- Pedestrian Crossings
- Existing Building
- Proposed Redevelopment
- Speed Table




ST. CHARLES STREET
ST. ANDREW STREET
MT. RUSHMORE RO

Parking street concept. The half-block of Clark Street west of Mt. Rushmore Road would be redesigned to include on-street parking for adjacent properties, improved crosswalks for pedestrians, and speed tables for the neighborhood.

Mixed-use village along Mt. Rushmore Road near Clark Street. Concept shows a new sidewalk near street level with landscaped berm interrupted with stairs. New street trees, yard, landscaped median and a parade of streetlights with signature banners define the corridor.

3. Commercial Corridor

The bulk of commercial uses on Mt. Rushmore Road are located **between Franklin and Cleveland Streets** Businesses have direct access to Mt. Rushmore Road and provide off-street parking.

GOALS

- Improve pedestrian and vehicular safety by limiting uncontrolled vehicular access points to business.
- Provide enhancements targeted at unifying the overall corridor brand and image.
- Simplify the visual environment by limiting the proliferation of signage and working to consolidate or relocate the existing overhead utilities.

ISSUES

1. *Narrow Public Right-of-way.* The public right-of-way south of St. Patrick Street is 66', a much smaller rights-of-way than north of St. Patrick Street at 95'. As a result, the street lanes take up most of the rights-of-way, leaving smaller amount of space for sidewalks and utilities, which hug the curb.
2. *Wilson Park Access.* Crossing the five-lane street is difficult and unsafe. Access to the park is essentially cut off to the East Neighborhood.
3. *Frequent Curb Cuts. Many of the businesses south of Franklin Street have direct access onto Mt. Rushmore Road and depend on left turn movements. Businesses north of Franklin Street do not rely as much on left turn movements.*
4. *Retaining Walls.* Several developments along the west side of the street have steep drop-offs.
5. *Sidewalks.* Sidewalks are developed along the back of the curb, leaving no setback between the pedestrian pathway and vehicle. This practice makes sidewalks impassable during snow storms as plows push the snow onto the sidewalk.

PUBLIC IMPROVEMENTS

- ***Acquire Right-of-way.*** To accommodate for more pedestrian space, additional minimum amount of right-of-way may be acquired from adjacent property owners. Additional space would provide more sidewalks and landscaping, thereby creating an attractive front door.
- ***Pedestrian Crossings.*** A refuge median where it would otherwise be a left turn lane. These crossings connects the east and west neighborhoods. Also, by making Mt. Rushmore Road easier for pedestrians to cross at several points, these nodes improve the business environment by providing access to restaurants and stores. The median crossing provides space for landscaping and other amenities.
- ***Medians.*** *Installing* a raised medians defines the turning movements along the street and subtly calms traffic as they approach downtown by narrowing the motorist's field of vision.
- ***Flormann Street Intersection.*** Flormann Street should be realigned to eliminate the existing jog in the intersection. The realigned Flormann will become an important east-west link in the street, bicycle, and pedestrian transportation system. The 9th Street Bicycle Boulevard ends at Flormann, and the bicycle system connecting to the east passes through the intersection. While signals are not currently warranted, the intersection should be monitored. With realignment and adjacent development, future signalization may well be required.

PRIVATE INVESTMENTS

- ***Landscaping.*** Front yard landscape improvements for many commercial businesses need to be implemented. Adding life and color to this harsh environment will help unify existing established open spaces including Wilson Park.

- ***Redevelopment Near Safeway.*** The Safeway parking lot appears to be underused and could support additional development. An emerging development pattern throughout the country is taking outlying parking areas adjacent to the street and converting it to developable property.

- ***Shared Parking.*** At several locations throughout this segment of the corridor, parking and access efficiency could be improved by consolidating access points and sharing access across lot lines.

CORRIDOR LEGEND

- Roadway Lighting
- Signalized Intersection
- Gateway Monument Feature
- Corridor Marker or Public Art Opportunitiy
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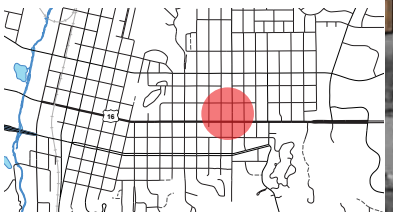
- Speed Table




MT. RUSHMORE ROAD
ST. ANDREW STREET
ST. PATRICK STREET
ST. FRANCIS STREET

CORRIDOR LEGEND

- Roadway Lighting
- Signalized Intersection
- Gateway Monument Feature
- Corridor Marker or Public Art Opportunitiy
- Street Tree
- Ornamental Tree
- Bicycle Blvd or Route
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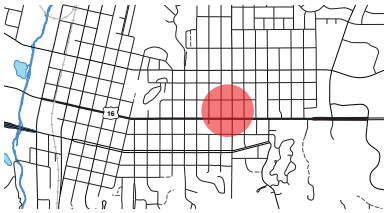
- Proposed Redevelopment
- Speed Table




MEADE STREET
INDIANA STREET
FLORMANN STREET

Above: Indiana Street Redevelopment. Potential redevelopment project for healthcare services east of Mt. Rushmore Road.

Right: Pedestrian Crossing. Connecting Wilson Park to the neighborhood towards the east is a midblock crossing. This type of crossing would be typical at various points along this segment of the corridor.

4. Services Fringe

Businesses **south of Cleveland Street** share access off of common drives, generally. Right-in turning movements are permitted, while cross-traffic movements are limited to Cleveland Street and Cathedral Drive.

GOALS

- Provide a welcoming image to northbound traffic entering Rapid City.
- Accommodate pedestrians in an otherwise vehicular dominated environment.
- Manage storm water in this steeply sloped, heavily paved environment.

ISSUES

1. *First impressions.* The southern portion of Mt. Rushmore Road lacks urban feel, having no sidewalks, lighting, curbs or street-oriented development.
2. *Stormwater runoff.* Stormwater runoff slopes to the sides of the street and into swales before ponding at the detention basin near Cleveland Street.
3. *Speeding.* Despite the speed limit being 35 mph, motorists traveling northbound exceed the speed limit until arriving at the Cathedral Drive traffic signal.
4. *Street alignment.* Highland Park Drive and Cleveland Boulevard intersect Mt. Rushmore Road, but offset by less than 100'. The proximity of these intersections creates awkward traffic movements.

PUBLIC IMPROVEMENTS

- ***Tower Road Bridge.*** Bridges are significant public structures, often becoming icons and gateways for districts and neighborhoods. The bridge at Tower Road could be enhanced with features that transforms the structure's visual quality. If the structure should ever be rebuilt, the bridge should be designed for both functionality and aesthetic design.
- ***Gateway Features.*** The median separating the lanes of traffic could be developed as a major gateway feature for Rapid City, announcing the arrival to the community.
- ***Stormwater Management.*** Enhancing the greenspace along the street's edges will manage stormwater's speed and allow vegetation to filter sediments from the runoff.
- ***Install sidewalks.*** Sidewalks presently do not go south of Cleveland Street. Walks should be constructed to, at least, Cathedral Drive.
- ***Streetlights.*** Install street lighting north of Cathedral Drive.
- ***Power lines.*** Consider relocating the overhead utilities to reduce the visible clutter in the landscape.

PRIVATE INVESTMENTS

- ***Shared Parking.*** At several locations throughout this segment of the corridor, parking and access efficiency could be improved by consolidating access points and sharing access across lot lines.

- ***Landscaping.*** Overstory tree placed along this segment of the corridor both in the R.O.W. and the private property will frame views of the distant horizons both to the south and to the north.

CORRIDOR LEGEND

- Roadway Lighting
- Signalized Intersection
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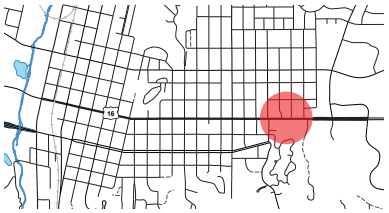

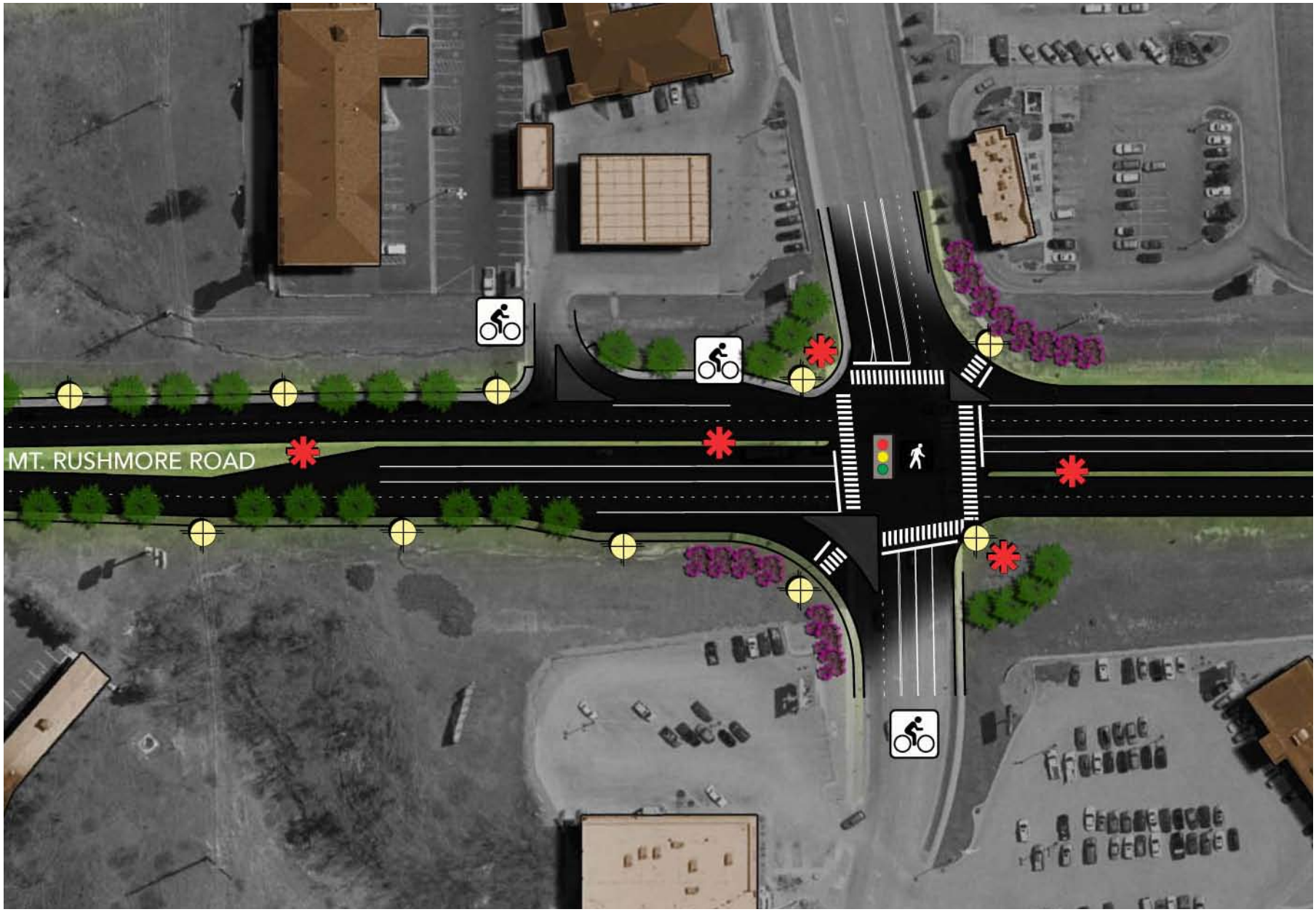
MT. RUSHMORE ROAD

CORRIDOR LEGEND

- Roadway Lighting
- Signalized Intersection
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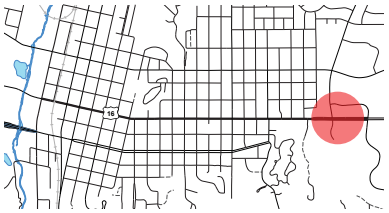

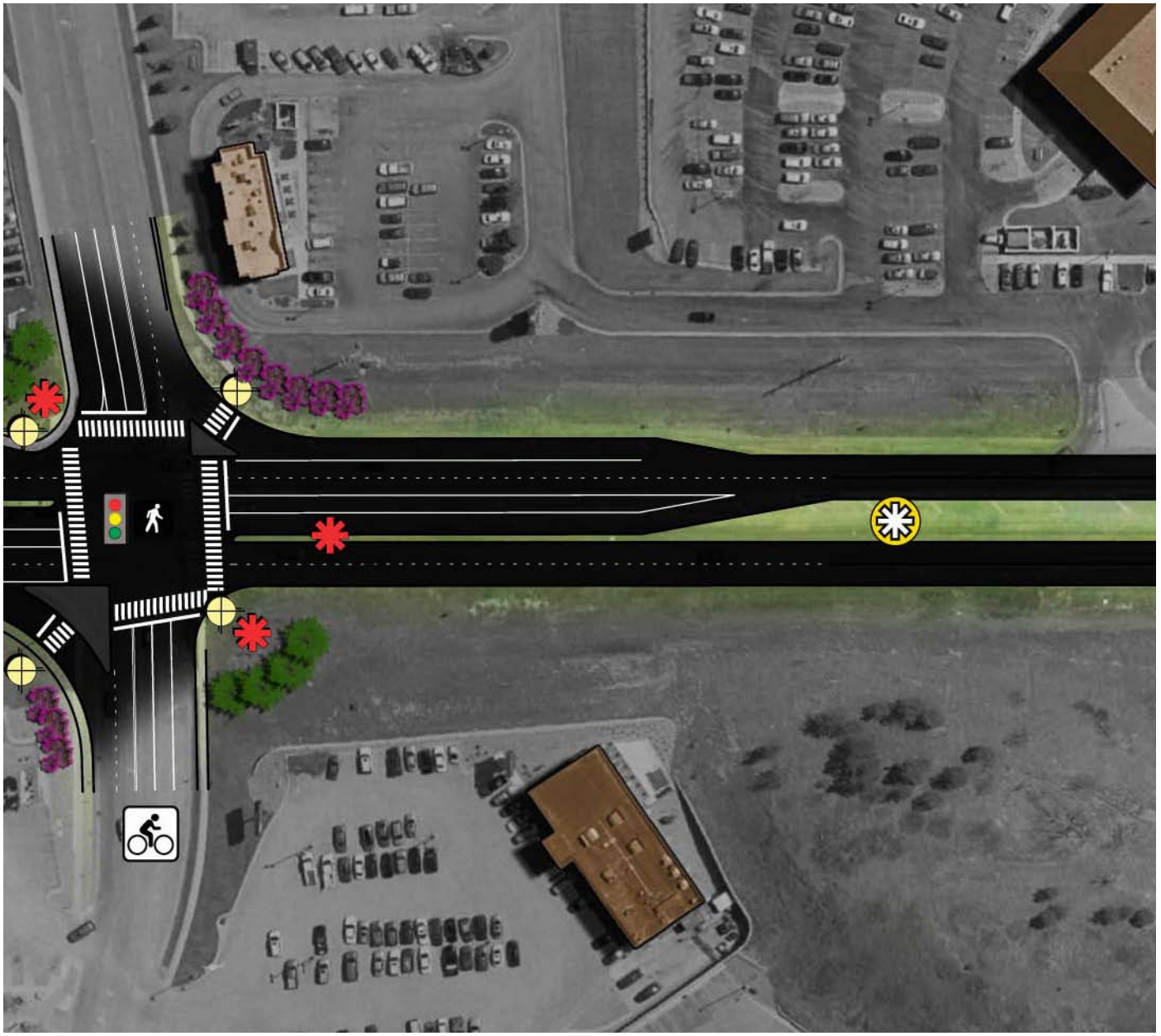


TOWER ROAD

Above: Community Gateway. The median area at Tower Road and to the north is a prime candidate to accept gateway feature enhancements.


R

5. Historic West Boulevard

OBJECTIVE

- Maintain the integrity of the West Boulevard neighborhood and its historic district.
- Establish a defensible edge between the commercial and mixed use environment of Mt. Rushmore Road and the quiet residential environment of the West Boulevard neighborhood. This may involve creating a neighborhood conservation overlay zone, discussed in more detail in this section.
- Prevent unwanted commercial and traveler traffic from encroaching into the neighborhood.
- Provide walking and bicycle connections between the neighborhood and retailers and services along Mt. Rushmore Road.

ISSUES

1. *Traffic Encroachment.* Because the southbound I-190 ramp aligns with West Boulevard, some travelers mistakenly continue south of St. Joseph Street into the residential area. In addition, commercial traffic along Mt. Rushmore sometimes uses residential streets for parking and circulation.
2. *Land Use Conflicts and Transitions.* Residential buildings along Mt. Rushmore Road have converted to non-residential uses, a logical and supportable transition if managed. However, some pressure has built to extend office and commercial uses to the west, and poorly buffered boundaries between commercial and residential uses threaten the quality of the eastern edge of the neighborhood.
3. *Connections.* East-west streets should provide desirable connections from neighborhood residents to commercial services along Mt. Rushmore Road. These include good accommodations for pedestrians and cyclists making short trips to Mt. Rushmore destinations.

PUBLIC ACTIONS

- ***Adopt protective zoning regulations and design guidelines.*** The Development and Neighborhood Environment section (page 35) recommends adoption of a special development overlay district for the Mt. Rushmore Road study area. The provisions of this district will manage the limit of expanding non-residential land uses, establish buffer and screening standards, include design standards and operational standards to prevent negative impact on the residential neighborhood.

  This zoning concept includes the following key provisions:

  - » Flexibility to permit limited mixed uses between Mt. Rushmore Road and 9th Street. Limited office uses, subject to specific controls, may be developed west to 9th Street. In addition, unified mixed use projects could incorporate the full block between Mt. Rushmore and 9th Street, provided that non-residential uses are capped at a specific percentage (such as 20%) of the land and/or floor area between the east alley and 9th Street.
  - » Design guidelines for non-residential conversions or new projects within the mixed use zone, as discussed in the Development and Neighborhood Environment section of this plan.
  - » Design review and approval requirements for all projects within the Overlay District, including modifications or widenings to public streets.
  - » No direct visibility of parking lots, loading areas, or other areas with significant visual or environmental impact from residential uses in the

overlay district.

  - » Landscaping and buffering requirements between residential and non-residential uses, except internally within planned mixed use developments.

- *Manage traffic encroachments with directional information and visual cues at the St.* Joseph and West Boulevard intersection; the use of parking streets and curb extensions at alleys; and traffic calming techniques to discourage commercial traffic from using neighborhood streets.

- *Develop 9th Street as a "bicycle boulevard."* The adaptation of 9th Street to provide a bicycle-friendly environment between Kansas City and Flormann Streets will provide good north-south connectivity and further calm motor vehicle traffic. Bicycle lanes, where provided, should provide adequate clearance to permit cyclists to ride in the lane on a line clear of opening car doors.

- *Median enhancements.* Landscaping, markers, and monuments along West Boulevard and in its median will sustain the value of this distinctive street.

- *Stormwater Management.* The City should upgrade storm water management systems to intercept runoff from the west.

6. East Neighborhood

OBJECTIVE

- Maintain the integrity of the West Boulevard neighborhood and its historic district.
- Establish a "defensible transition" between the commercial and mixed use environment of Mt. Rushmore Road and the quiet residential environment of the West Boulevard neighborhood.
- Prevent unwanted commercial and traveler traffic from encroaching into the neighborhood.
- Provide walking and bicycle paths between the neighborhood and retailers/services along Mt. Rushmore Road.

ISSUES

1. *Parking and commercial encroachment east from Mt. Rushmore Road.* In common with the other side of the street, commercial uses and their effects have a tendency to spread out from the major commercial corridor. However, the lack of a defining alley complicates this problem, because these land use transitions do not have a logical edge. As a result, unmanaged parking extensions and service areas have a tendency to blight adjacent residential areas.
2. *Housing deterioration.* Some housing, including multifamily buildings adjacent to the commercial edge are, in fact, deteriorating.
3. Redevelopment sites and underused properties. Several areas on the east side of Mt. Rushmore provide significant opportunities for residential and office/commercial redevelopment.

PUBLIC ACTIONS

- ***Adopt protective zoning regulations and design guidelines.*** The Development and Neighborhood Environment section (page 35) recommends adoption of a special development overlay district for the Mt. Rushmore Road study area. The provisions of this district will manage the limit of expanding non-residential land uses, establish buffer and screening standards, include design standards and operational standards to prevent negative impact on the residential neighborhood.
- ***Housing code enforcement and rehabilitation.*** Property maintenance code enforcement can help reduce blighting influences, when combined with a program to upgrade the eastern edges of commercial properties.
- ***Site redevelopment.*** City policy should encourage redevelopment of several key sites in the neighborhood east of Mt. Rushmore Road. These sites include the multifamily building north of Clark Street, and enhanced office development along the 7th Street corridor.
- ***Greater ease of crossing Mt. Rushmore Road.*** Pedestrian crossings and improvements proposed by this plan can link neighborhood amenities such as Wilson Park and the elementary school to the east neighborhood, increasing its value and access to services and amenities.

CHAPTER 4

Implementing the Vision

This plan's goal and commitment is to provide Rapid City with a real (rather than theoretical or utopian) vision and plan for the Mt. Rushmore Road corridor.

Initial Policies

AMEND ZONING ORDINANCE & ADOPT DESIGN GUIDELINES

The project area has several issues relating to appropriate uses, zoning and design. Zoning establishes land use controls, while Design Guidelines provides advisory, or perhaps mandatory, restrictions and requirements on the performance of the property. Both zoning and design guidelines are discussed in the Development & Neighborhood Environment beginning on page 35.

ESTABLISH A BUSINESS IMPROVEMENT DISTRICT (BID)

The plan addresses organizational issues for corridor management and promotion. Some commercial strips are envisioning themselves as Business Improvement Districts, much as traditional neighborhood and town centers have since the initiation of the tool in the late 1970s. An example of such a district that is analogous to Mt. Rushmore Road is the South Locust corridor in Grand Island, Nebraska. Here, as part of a corridor reconstruction project, the city's redevelopment authority created a tax increment district to finance landscaping, lighting, and corridor enhancements. Businesses created a Business Improvement District to finance some of the capital costs and to maintain the enhanced streetscape. Property owners elected to participate in a Business Improvement District to share the cost of maintenance. This unified approach has paid off in a vastly improved physical and business environment that has generated substantial new development.

South Locust corridor in Grand Island, Nebraska used both a TIF district and a BID to develop and maintain right-of-way enhancements.

Financing

This section considers the costs of specific recommendations and the entire public improvement program; the benefits quantified by development value; and a specific financing program. The Private Utilities column includes burying the power and telecommunication main line and service lines. A 15% contingency is considered in the probable cost.

FUNDING SOURCES

- ***Federal Transportation Funding.*** Mt. Rushmore Road is functionally classified as a Principal Arterial, and is therefore may be eligible for federal transportation funding assistance through the South Dakota Department of Transportation. The federal funding assistance may provide up to 80% of the construction cost of eligible road construction activities. The eligible construction activities typically include roadway surfacing, traffic signals and associated roadway items. Construction activities that are typically not eligible for federal transportation funding include city water/sewer utilities and other items not essential to providing a transportation facility. To secure funding, the Rapid City Area Metropolitan Planning Organization and South Dakota Department of Transportation must coordinate with each other to determine South Dakota Department of Transportation funding priority, amount of funding available, eligible costs, and what year that funding would be available. Federal transportation funding is typically programmed 3 to 5 years out, so funding for any new projects is typically available three or more years in the future. Once the funding is identified, the project must be included in the Rapid City Area Metropolitan Planning Organization Transportation Improvement Program (TIP) and the State Transportation Improvement Program (STIP).

Additionally, federal transportation funding is available through the annual congressional appropriations process. All units of state and local government are eligible to apply for congressionally directed funding. Applications for funding are typically released by each congressional office in January of each year. One application per project is required to be submitted to each congressional office in February or March, depending on the specific application deadline. Additionally, funding requests should be accompanied by letters of support from the requesting entity and project stakeholders. Though being on the Transportation Improvement Program or State Transportation Improvement Program is not required, it would help to boost the competitiveness of Rapid City Area Metropolitan Planning Organization's federal appropriations request. It should be noted that the congressional appropriations process can take 12-18 months to complete. Additionally, congressionally directed funding has become both limited and highly competitive in recent years.

- *American Recovery and Reinvestment Act of 2009 Transportation Grants: $1.5 billion is provided for this discretionary grant program.* A grant provided cannot be less than $20 million or more than $300 million. However the United States Department of Transportation's Transportation Secretary may waive the minimum grant size for projects in smaller regions, cities or States. The project must have national or regional significance. Priority will be given to projects that require a contribution of federal funds in order to complete an overall financing package, and to projects that can be completed within three years of enactment of the Act. Projects conducted using these funds must comply with all National Environmental Policy Act (NEPA) requirements, the same as Federal Transportation Funding above. The Secretary will publish further criteria on which to base the grant competition within 90 days. The Secretary will require that grant applications must be submitted within 180 days from the publication of the criteria and announce all projects selected for funding within one year for enactment of the Act. Funding applications for this program were due in September 2009; successfully funded projects have yet to be announced. However, if Congress views this program as a success, additional funding may be provided for another round of targeted transportation infrastructure grants.

- *Federal Transportation Bill: The U.S.* House of Representatives Committee on Transportation and Infrastructure is preparing new surface transportation authorization legislation to replace the current "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users", otherwise known as SAFETEA-LU Authorization, which expires September 30, 2009. As a result, House members will have the opportunity to submit applications for funding authorization under this bill "Member-Designated High Priority Projects". These High Priority Projects will be selected through a competitive process and projects which can be demonstrated to have the greatest need and a large amount of community support will be selected for funding authorization. South Dakota Congresswoman Stephanie Herseth-Sandlin released her high priority project funding request form last spring and responses were due back before April 27, 2009. However, the Senate has not yet solicited applications for high priority project funding. This creates an opportunity for communities to apply for funding in the Senate version of the Surface Transportation Authorization Act. Interested parties should get in touch with their Senate delegation and request that a copy of the funding application be e-mailed to them as soon as it is released.

TABLE 4.1: BLOCK-BY-BLOCK PROBABLE COST, 2014

Street Description	Street Reconstruction	Water Distribution	Sanitary Sewer	Storm Sewer	Private Utilities	ROW/ Easements	Enhancements	TOTAL
2014								
St. Patrick - St. Francis	$357,300.00	$82,290.00	$39,780.00		$106,547.75	$67,500.00	$117,400.00	$770,817.75
St. Francis - St. Anne	$342,850.00	$82,290.00	$39,780.00	$39,000.00	$106,547.68	$66,150.00	$83,400.00	$760,017.68
St. Anne - Flormann	$304,385.00	$75,960.00	$36,720.00	$29,250.00	$78,890.26	$105,000.00	$53,400.00	$683,605.26
Flormann - Meade	$383,600.00	$93,895.00	$45,390.00		$149,586.45	$125,400.00	$132,400.00	$930,271.45
Meade - Indiana	$261,600.00	$67,520.00	$32,640.00		$72,680.00	See Note (1).	$67,200.00	$501,640.00
Indiana - Cleveland	$328,095.00	$88,620.00	$42,840.00	$7,500.00	$55,602.50	$69,075.00	$36,000.00	$627,732.50
Cleveland - Cathedral	$915,250.00	$192,010.00	$92,820.00	$22,000.00		$15,000.00	$311,000.00	$1,548,080.00
Cathedral - S. Project Limits							$747,000.00	
SDDOT Cost	$2,748,426.00			$78,200.00		$403,312.50		$3,229,938.50
City Cost	$89,079.00	$682,585.00	$329,970.00	$19,550.00		$44,812.50		$1,165,996.50
Private Utility Cost					$90,861.00			$90,861.00
Others Cost	$55,575.00				$478,993.64		$1,547,800.00	$2,082,368.64
TOTAL 2014 Phase Cost	**$2,893,080.00**	**$682,585.00**	**$329,970.00**	**$97,750.00**	**$569,854.64**	**$448,125.00**	**$1,547,800.00**	**$6,569,164.64**

TABLE 4.1: BLOCK-BY-BLOCK PROBABLE COST, 2015

Street Description	Street Reconstruction	Water Distribution	Sanitary Sewer	Storm Sewer	Private Utilities	ROW/ Easements	Enhancements	TOTAL
2015								
South St. - Fulton	$222,380.00	$48,530.00	$23,460.00	$43,060.00	$58,707.48	$4,275.00	$34,000.00	$434,412.48
Fulton - Clark	$347,015.00	$75,960.00	$36,720.00	$52,371.00	$205,390.03	$7,260.00	$188,400.00	$913,116.03
Clark - Fairview	$384,180.00	$84,400.00	$40,800.00	$40,000.00	$165,600.00	$3,748.00	$111,400.00	$830,128.00
Fairview - St. James	$378,830.00	$82,712.00	$39,984.00	$39,200.00	$141,358.19	$4,125.00	$172,200.00	$858,409.19
St. James - St. Cloud	$381,120.00	$82,712.00	$39,984.00	$39,200.00	$129,858.31	$3,563.00	$173,400.00	$849,837.31
St. Cloud - Franklin	$367,170.00	$82,712.00	$39,984.00	$29,400.00	$129,857.88	$4,060.00	$177,400.00	$830,583.88
Franklin - St. Charles	$376,220.00	$82,712.00	$39,984.00	$19,600.00	$118,358.31	$4,238.00	$173,400.00	$814,512.31
St. Charles - St. Andrew	$392,120.00	$82,712.00	$39,984.00	$17,640.00	$83,857.76	$2,100.00	$173,400.00	$791,813.76
St. Andrew - St. Patrick	$355,370.00	$82,712.00	$39,984.00	$16,200.*00*	$101,889.94	$3,825.00	$87,400.00	$687,380.94
SDDOT Cost	$3,044,184.75			$222,503.25		$33,474.60		$3,300,162.60
City Cost	$90,620.25	$705,162.00	$340,884.00	$74,167.75		$3,719.40		$1,214,553.40
Private Cost					$99,422.00			$99,422.00
Others Cost	$69,600.00				$1,035,455.91		$1,291,000.00	$2,396,055.91
TOTAL 2015 Phase Cost	**$3,204,405.00**	**$705,162.00**	**$340,884.00**	**$296,671.0**0	**$1,134,877.91**	**$37,194.00**	**$1,291,000.00**	**$7,010,193.91**

TABLE 4.1: BLOCK-BY-BLOCK PROBABLE COST, 2016

Street Description	Street Reconstruction	Water Distribution	Sanitary Sewer	Storm Sewer	Private Utilities	ROW/ Easements	Enhancements	TOTAL
2016								
Omaha St. - Main St.	$792,040.00	$168,800.00	$81,600.00	$171,200.00		$9,263.00	$211,500.00	$1,434,403.00
Main St. - St. Joseph	$404,050.00	$86,932.00	$42,024.00	$74,748.00	$75,000.00	$675.00	$119,400.00	$802,829.00
St. Joseph - Kansas City	$409,050.00	$86,932.00	$42,024.00	$69,536.00	$75,000.00	$2,100.00	$269,400.00	$954,042.00
Kansas City - Quincy	$416,020.00	$86,932.00	$42,024.00	$69,536.00	$54,981.50	$2,063.00	$164,400.00	$835,956.50
Quincy - Columbus	$399,450.00	$86,932.00	$42,024.00	$69,536.00	$98,462.92	$3,713.00	$164,400.00	$864,517.92
Columbus - South St.	$394,800.00	$86,932.00	$42,024.00	$69,536.00	$132,963.16	$4,275.00	$59,400.00	$789,930.16
SDDOT Cost	$2,674,639.50			$393,069.00		$19,880.10		$3,087,588.60
City Cost	$80,470.50	$603,460.00	$291,720.00	$131,023.00		$2,208.90		$1,108,882.40
Private Utility Cost					$79,717.00			$79,717.00
Others Cost	$60,300.00				$356,690.59		$988,500.00	$1,405,490.59
TOTAL 2016 Phase Cost	**$2,815,410.00**	**$603,460.00**	**$291,720.00**	**$524,092.00**	**$436,407.59**	**$22,089.00**	**$988,500.00**	**$5,681,678.59**
TOTAL 2014-2016	**$8,912,895**	**$1,991,207**	**$962,574**	**$918,513**	**$2,141,140**	**$507,408**	**$3,827,300**	**$19,261,037**

TABLE 4.2: TOTAL COST SUMMARY

SDDOT	$9,617,689
City	$3,489,432
Private Utility	$270,000
Other	$5,883,915
TOTAL	$19,261,037

- ***Transportation Enhancement Funding: The federal transportation bill includes federal funding provisions for Transportation Enhancements, that include roadway landscaping/beautification as an eligible activity.*** This funding category typically provides federal funding for up to 80% of the eligible activities. Local jurisdictions must coordinate with South Dakota Department of Transportation to apply for funding. Funding is typically allocated several years ahead similar to Federal Transportation Funding, and when funding is identified it must be included in the Rapid City Area Metropolitan Planning Organization's Transportation Improvement Program and South Dakota Department of Transportation State Transportation Improvement Program.

- ***Tax Incremental District (TID).*** Tax Incremental Districts (chapter 11-9). Tax Incremental District permits the use of a portion of local property and sales taxes to assist funding the redevelopment of certain designated areas within your community. Projects pay their entire established tax obligation. However, taxes produced by the added value of the property caused by redevelopment or improvements can be used to finance project-related improvements or other public improvements in the district. TID may be used to pay certain costs incurred with a redevelopment project. Such costs may include, but are not limited to:

- ***Bond Issues.*** General obligation bond issues are appropriate to finance major public projects or improvements, and are secured by general city revenues. These revenues typically include property taxes or, potentially, local option sales taxes. In the corridor concept, bonds are most appropriate to finance all or part of the streetscape improvements.

- ***Business Improvement District.*** *See Policies, page 98.*

- ***2012 Fund.*** In 1992, the City of Rapid City began a process called Vision 2012 - a program of long range planning for the future of the community. Building on the progress made following the 1972 flood, the City extended the half cent sales tax by a vote of the citizens, to provide a stable funding source to continue the progress and improve the quality of life for the citizens. These funds can be used to fund municipal infrastructure including streets, sanitary sewer, storm sewer, water, drainage facilities, municipal buildings or civic improvements which add to the quality of live within the community and have an identified long term funding source for the operation and maintenance of the improvements funding by the 2012 Fund. This source could be utilized to assist in funding of the streetscape improvements and municipal infrastructure.

Coordinated Maintenance and Design

A quality streetscape must continue to look good over time. Long-term maintenance is a critical design determinant and is a serious matter for both the City and the local community. Community stewardship can help stretch city resources, and adjacent property owners should be involved in maintenance. In addition, initial maintenance should be part of installation contracts.

The streetscape maintenance program should address the following:

- ***Graffiti Prevention.*** Planting trees or other greenery near graffiti-prone areas deters vandalism. Currently, utility boxes and some poles have

- ***Irrigation System.*** Weekly inspections should be conducted to adjust heads and water performance. Systems should be started in the spring and shut

down in the fall.

- ***Landscape.*** Trees and shrubs should be pruned to remove dead or damaged wood annually. Mulch depth should be maintained at 3". All landscape beds should be weeded regularly. Perennials should be cut back in March/April and divided and fertilized as required.

- ***Lighting.*** All light outages should be repaired. Metal elements should be reviewed yearly and re-finished as required.

- ***Sidewalks.*** Sidewalks should be regularly power washed and joints should be sealed every 5 years. Gum removal should occur regularly.

- ***Street Furniture.*** All damaged stone, metal and concrete elements should be replaced immediately. All graffiti should be removed. Using durable materials will ensure the longevity of the project and will help to reduce maintenance costs.

- ***Street Sweeping.*** Streets should be routinely cleaned to remove sand and debris.

- ***Trash Pick-up.*** Trash should be picked up daily or weekly depending on the use of the street. Trash should be removed from the street

- ***Tree Trimming.*** Appropriate tree species should be planted along streets and near power lines. Trees requiring trimming should be done or overseen by a certified arborist, carefully pruning to not adversely deform the shape of the trees.

Phasing Schedule

Progress can be gradual and incremental. Each phase provides a finished product that adds value, and builds on the focus established by earlier phases.

The Mt. Rushmore Road Corridor improvements may be completed in phases due to funding limitation by the involved parties. Once one phase is funded and completed it is anticipated that the momentum created by that phase will carry over into subsequent phases. Outstanding issues such as flooding, pavement deterioration, public demand, or pedestrian and traffic safety are factors that are considered when establishing a priority phasing schedule for this type of project. None of these factors provide a greater degree of concern over another when comparing one section of the corridor to another.

The concepts in this plan require storm sewer improvements from St. Patrick Street to Main Street to be reconstructed, redirecting the runoff flow of the Downtown Core to an upstream direction. Also, the sanitary sewer at the intersection of Main Street and Mt. Rushmore Road needs improving. This sewer crosses the intersection from west to east and should not have a major impact on phasing plans.

This plan recommends reconstructing Mt. Rushmore Road from south to north, based on the South Dakota Department of Transportation's potential improvement schedule. The size and extent of each phase will be determined by City and South Dakota Department of Transportation policy and budget constraints.

Conclusion

The Mt. Rushmore Corridor Study brought together a diverse group of people into a participatory process to identify the vision for Mt. Rushmore Road's future. That vision will not be realized in one fell swoop; the consensus building effort must be maintained by the City, area businesses and the public. Recommendations for public investment should start being implemented by beginning the process to identify funding and obtain any needed environmental clearances.

In addition to the traditional funding sources for transportation projects, two significant federal opportunities are on the horizon: the Surface Transportation Authorization Bill and the FY 2011 Transportation-Housing & Urban Development Appropriations Bill. Both of these funding vehicles create a unique opportunity for communities to apply for federal dollars to advance their priority transportation initiatives.

The recommendations regarding land redevelopment strategies, access management, overhead utility relocations, and side street parking improvements could all begin before a major roadway reconstruction project. Community policies and codes could be updated to begin the realization of the Mt. Rushmore Road Corridor vision plan. The business community should continue their dialogue together and with the City to begin implementation strategies on and off the public right-of-way. The completion of the corridor study should be celebrated with a public event along the corridor, but not as an end …but as a beginning.

APPENDICES

Minimum Design Standards for US16, Mt. Rushmore Rd

SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION (SDDOT)

- *Driving lane widths - 11'*
- *Left-turn lane widths - 11'*
- *Parallel parking - 8' plus gutter pan.*
- *Rights-of-Way.* Must be 75', which includes five 11' lanes, two 2.67' curb and gutter and two 7' behind curb and gutter.
- *Sidewalk widths.* Must be 5' wide and meet ADA requirements, which is less than 2% grade for drive-ways, curb ramps and detachable warnings.