Executive Summary

Highway 41 Corridor Master Plan Update

A Guide for Land Use and Transportation Improvements

Board Approved December 8, 2016

Prepared by: Kootenai Metropolitan
Planning Organization

October 2016

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Development of the update to the Plan was a collaborative effort with Project Stakeholders, KMPO and the Public.

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CHAPTER 1 - INTRODUCTION

The "original" Highway 41 Corridor Master Plan was prepared for the City of Post Falls by the Transpo Group in August of 2002. It was funded by the Transportation Equity Act for the 21st Century of 1998 under the Transportation and Community and System Preservation Program grant under the Federal Highway Administration, Idaho Division. The corridor plan was completed but never officially adopted however it was utilized by the City of Post Falls.

This document summarizes the full update to the SH 41 Corridor Master Plan (2016). More detailed information contained in the full report can be found online at www.kmpo.net, under the Regional Projects tab.

In 2014, an interest in "updating" the SH 41 Corridor Master Plan arose from the Idaho Transportation Department (ITD). It then was presented and discussed at the KCATT committee and the Kootenai Metropolitan Planning Organization (KMPO) Board for acceptance to proceed with an update the SH 41 Corridor Plan. KMPO staff agreed to update the plan with assistance and participation from the jurisdictions and ITD.

The Kootenai Metropolitan Planning Organization (KMPO) is the federally designated Metropolitan Planning Organization (MPO) for the Kootenai County, Idaho metropolitan area. The purpose of KMPO is to provide coordinated, cooperative and continuous transportation planning for the Metropolitan Planning Area, which is all of Kootenai County. The KMPO Director and staff maintain day-to-day operational and administrative needs. The KMPO Board oversees the KMPO operations. KMPO also has a technical transportation committee, KCATT, which meets monthly to discuss and advise the KMPO Board on technical transportation issues.

The essential element in updating the plan was to rely on a collaborative team effort between; KMPO staff, the Idaho Transportation Department, the City of Post Falls, the City of Rathdrum, Post Falls Highway District, Lakes Highway District, Kootenai County and the Kootenai Area Transportation Team (KCATT), and the public.

The SH 41 Corridor Master Plan Update makes updates to: land uses/categories, average land use densities, planned roadway projects, developer driven projects, 2010 decennial census data, traffic analysis zones (TAZs), turning movement traffic counts, travel demand modeling network and volumes, travel times, federal roadway functional classifications, access control/permitted approach locations, accident data for intersections and roadway segments, and the level of service/capacities within the corridor that have changed since the original plan was written in 2002. Additional information has been added such as updated comprehensive plans, railroad crossing accidents, non-motorized plan, priority corridor map, transit and regional population growth.

The goal of the update has been to gather comments from the jurisdictional stakeholders and the public to be incorporated as a draft final update to reflect current concerns, conditions and long term needs. The ultimate goal of final adoption of the corridor master plan by KMPO and the partner jurisdictions to guide and direct future investments.

Key Strategies of the Plan:

The SH 41 Corridor Master Plan Update is a key component to improving the SH 41 corridor in order to address existing and future capacity, safety, access, mobility and economic issues. The corridor plan improves the measures of effectiveness for the following:

- Reduces total system delay with future build forecasts.
- Restricts turning movements at un-signalized intersections along SH 41 corridor.
- Establishes new signalized intersection locations at ½ mile spacing.
- Provides for the coordination of signals along the corridor from Seltice Way to Boekel Road.
- Coordination of signals on Greensferry Road from Mullan Avenue to Prairie Avenue.
- Defines widening of SH 41 as a divided highway, increasing capacity and improving overall safety
- Conducted backage road analysis, recommending to build ½ mile backage roads first if phased construction becomes necessary
- Included ITD guidelines on access control per IDAPA 30.03.42.
- Established consistent roadway Level of service conditions for existing and future forecast years.

- Establishes a framework for non-motorized project development recommendations
- Provides jurisdictional consistency and cohesion and coordination of land uses within the corridor.
- Identifies transportation management strategies

KMPO's public involvement process was followed throughout the update to ensure there were timely opportunities to receive public input and solicit the views of as many people as possible.

Land Use and Transportation:

The impacts of growth on the Rathdrum Prairie, and within the SH 41 corridor in particular will dramatically impact land use and the resulting traffic across the region. *Traffic volumes are projected to increase by approximately 64% within the corridor by the future out-year of 2035.* Access management is a key component of the preservation of the State Highway 41 function.

The SH 41 corridor plan update uses existing travel demand conditions and looks out to future conditions in 2035 utilizing a land use based travel demand model (VISUM).

The integrates land use and transportation plans which sustain community development; build an environmentally sound plan for preserving highway integrity and functions, while enhancing safe local access options; provide off corridor access alternatives which compliment local development; maintain commercial viability; coordinate jurisdictional and public interests; and provide direction for the adjoining jurisdictions in future management of the corridor.

Land use and transportation policies guide both private investment and public expenditures within the SH 41 corridor. Comprehensive land use plans and zoning ordinances set a framework for how and when the development will be allowed to occur, and therefore, how much traffic will be added to the transportation system. Therefore the Update will guide both corridor development and a framework for ITD and jurisdictions along the corridor for future implementation and controls.

- Identifies accidents and problem areas along the corridor.

A wide variety of transportation needs are also continuing to be improved along the corridor. This includes; bicycle, pedestrian, public transportation and freight mobility. This Update recognizes and builds upon the many new improvements for multi-modal transportation throughout the region by the jurisdictions and highway districts such as; bike lanes, joint use trails, and residential pathways along developments to encourage and enhance personal mobility within the region.

Geographic Area of the Plan:

The updated corridor plan study area is bounded by Interstate 90 (I-90) on the south, SH 41/SH 53 Junction to the north, Greensferry Road to the west, and Meyer Road to the east. The area is generally one mile on either side of SH 41. The corridor is approximately 7.9 miles in length that connect the two cities of Post Falls and Rathdrum with agricultural uses still being practiced within the corridor. Both communities' Area of City Impact limits are within the study area, with the unincorporated Kootenai County in the middle. Local roads are owned and operated by the Post Falls Highway District, Lakes Highway District, and the cities of Post Falls and Rathdrum. Idaho Transportation Department owns SH 41, SH 53 and Interstate 90.

Purpose and Need for the Plan Update:

The purpose of the Highway 41 Corridor Master Plan is to integrate land use and transportation plans which sustain community development; build an environmentally sound plan for preserving highway integrity and functions, while enhancing safe local access options; provide off corridor access alternatives which compliment local development; maintain commercial viability; coordinate jurisdictional and public interests; and provide direction or the adjoining jurisdictions in the future management of the corridor. Goals of the study were followed from the original plan and reviewed throughout the process.

The goals include:

- Maximize coordination of jurisdictional interests;
- Provide safe corridor circulation alternatives that protect highway operational capacity;
- Direct and coordinate development opportunities through access management and consistent policy directions;
- Encourage appropriately designed open space in areas along the corridor commensurate with development;
- Reduce congestion delay on both SH 41 and intersecting roadways;
- Minimize impacts to adjacent properties;
- Encourage mixed use development along the corridor;
- Ensure adequate future right-of-way (ROW) to build new transportation improvements (travel lanes, utilities, drainage, joint use trails);
- Utilize Transportation System Management strategies along the corridor to improve personal safety and travel capacity (traffic signal system coordination and access management improvements);
- Protect and preserve natural resources.

Policy Framework:

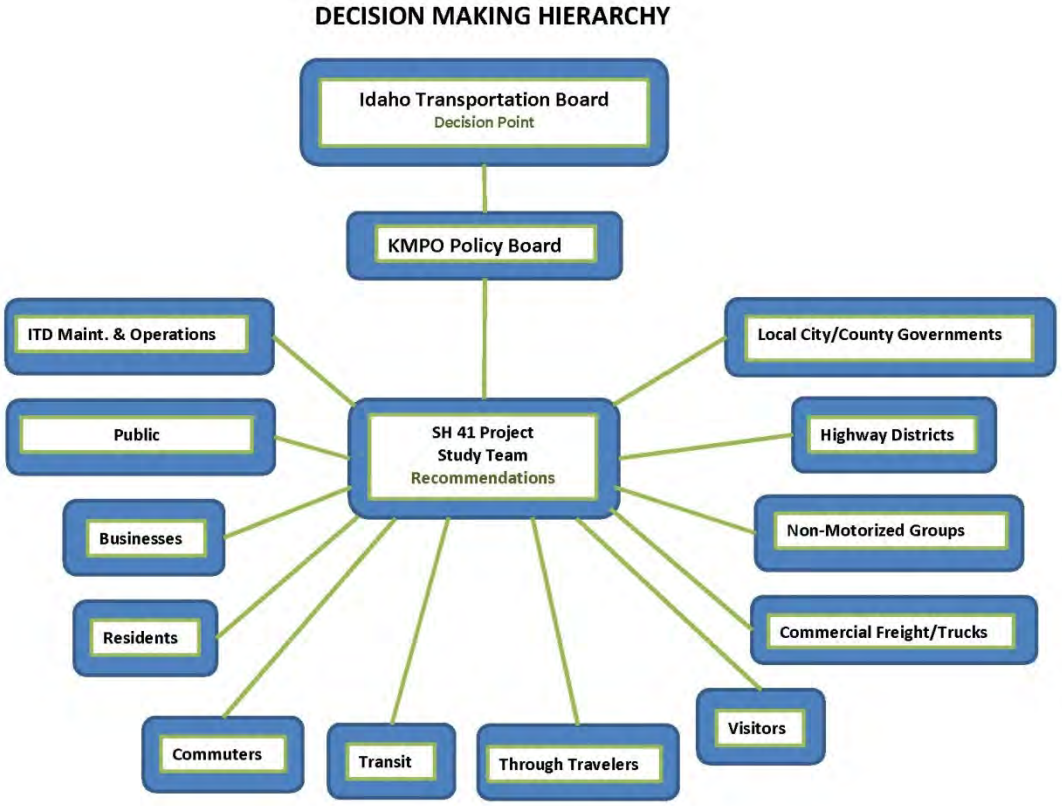
The plan update provides a framework for regional goals and policies, regulations, guidelines and development concepts regarding transportation and highway improvements. It sets in place locally developed land use patterns used to achieve adopted goals and policies. The Plan provides the opportunity to expand upon and enhance the existing Memorandum of Understanding adopted and implemented by Post Falls, Kootenai County, Rathdrum and ITD. Key components of the Plan framework are highway widening; access limitations; secondary access routes; land use patterns along the corridor (combined mixed use development) pedestrian and bikeway systems; retention and provision for open spaces as well as setback standards.

Decision Making Process

There are many stakeholders and jurisdictional members that have had an important part in the SH 41 Corridor Master Plan Update. The project study team consists of the following stakeholders; *City of Rathdrum; City of Post Falls; Kootenai County; Idaho Transportation Department; Lakes Highway District,*
Post Falls Highway District, Trail and Path advocates, Union Pacific Railroad, representatives of the development community, North Idaho College, and member of the general public.

During the course of the study, everyone has the opportunity to provide input; but eventually, someone has to make a final decision based on all the analysis and recommendations that have been developed. The graphic below illustrates the stakeholders interests involved with the study and identifies the ITD Board as the final decision maker.

Figure 1 - Decision Making Hierarchy



Study Goals

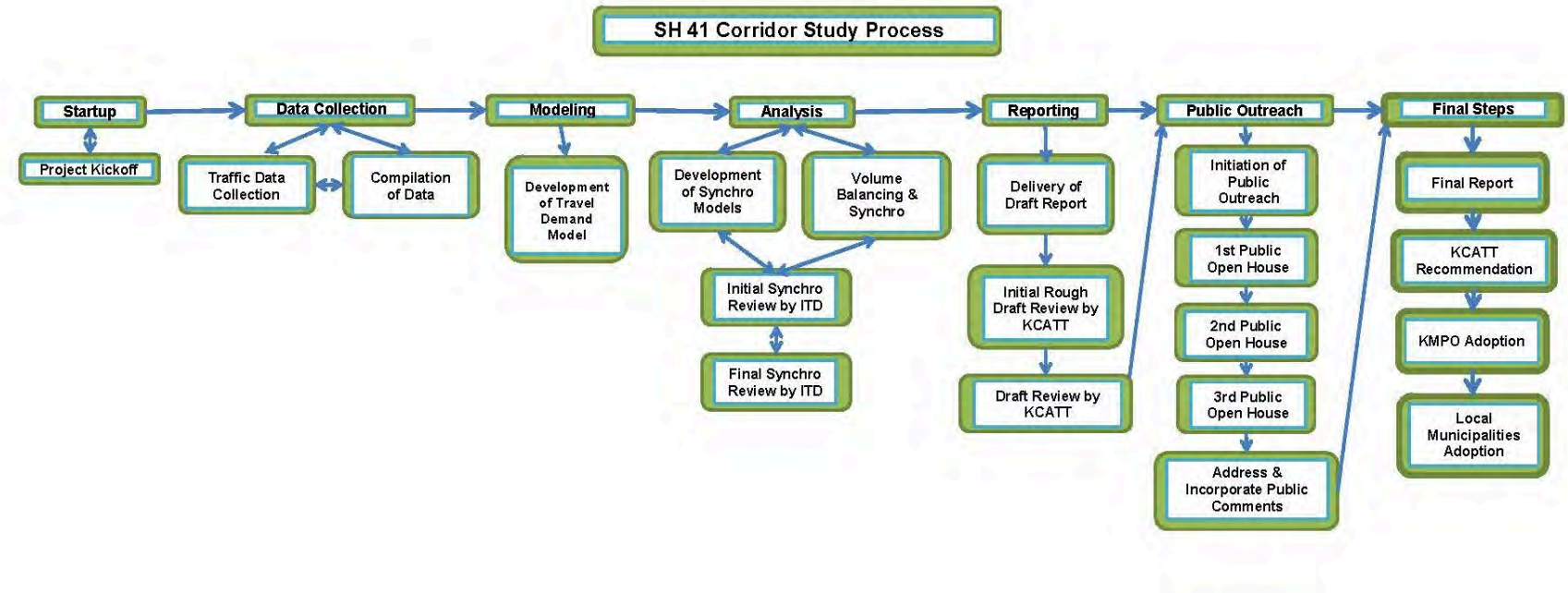
The goal of the update has been to gather comments from jurisdictions, stakeholders and the public to be incorporated as a final update to reflect current concerns, conditions and long term needs, based on the most current information available.

Obtain buy-in from local jurisdictions, stakeholders and the public; to fully adopt and implement the plan, thus providing guidance for future development and subsequent transportation related improvements to the corridor.

Study Process

The general strategy for updating the SH 41 Corridor Master Plan Update was to identify what has changed throughout the corridor, evaluate the data, compare current performance of the corridor and recommend a strategy to improve SH 41. The overall process is depicted in the following graphic:

Figure 2 - SH 41 Corridor Study Process



Shared Tier Decision Making Hierarchy – Public Comments

During the update, KMPO held three public open houses. Public comments were submitted and KMPO, in collaboration with the jurisdictions, reviewed and addressed themes contained in those comments. Jurisdictions reviewed and analyzed the comments and if there were requests for any changes to be made, the jurisdiction(s) considered the following factors in their response such as: available funding, the cost to make the change, is there appropriate right-of-way or would they have to buy additional property, matching the jurisdictional roadway design standards, does it enhance safety, what would the benefit/cost be, or is it feasible when comparing all the factors involved together?

A jurisdiction's flexibility for transportation investments somewhat depends on whether or not the transportation project is within their Area of City Impact boundary (ACI) and if they own and maintain the roadway. If the answer is yes, then that jurisdiction has the final responsibility and decision making process. If it is outside the ACI, then it is determined by who owns the roadway within the shared tier area. A shared tier is simply an area where there is more than one jurisdiction that could own the roadway, depending on where the roadway is located within the municipal boundaries. Kootenai County for example, owns no federal functionally classified roads, the highway districts typically own and maintain the roads and would be in a shared tier with Kootenai County if it is outside the cities' ACI boundaries, however, Kootenai County would only have jurisdiction over the land use within the shared tier, since they do not own or maintain the roadways. The appropriate highway district would have governing control over the roadway and the ultimate decisions surrounding it.

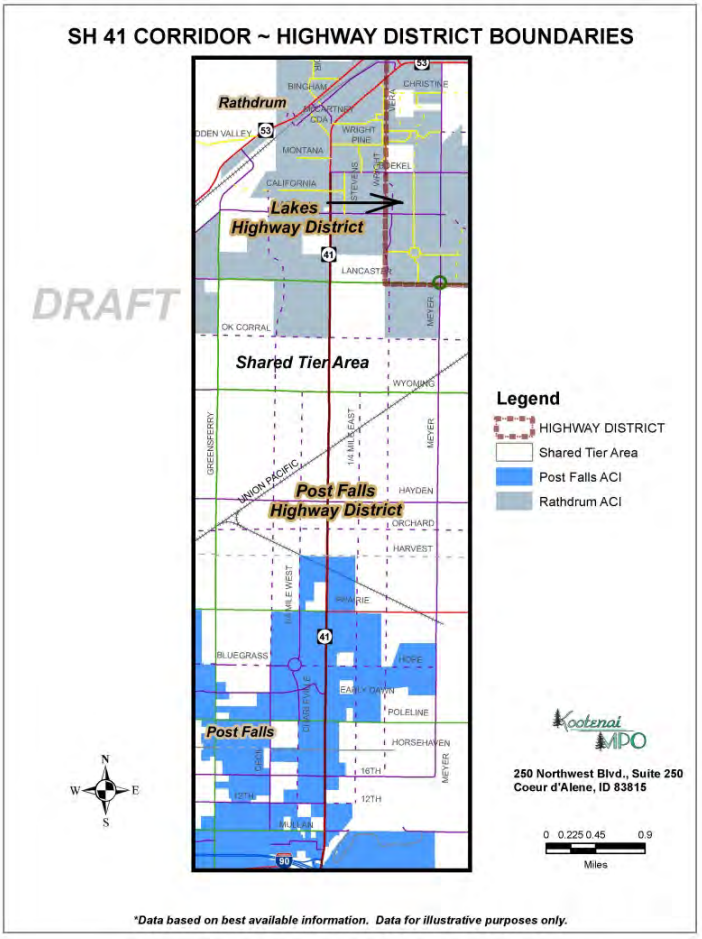
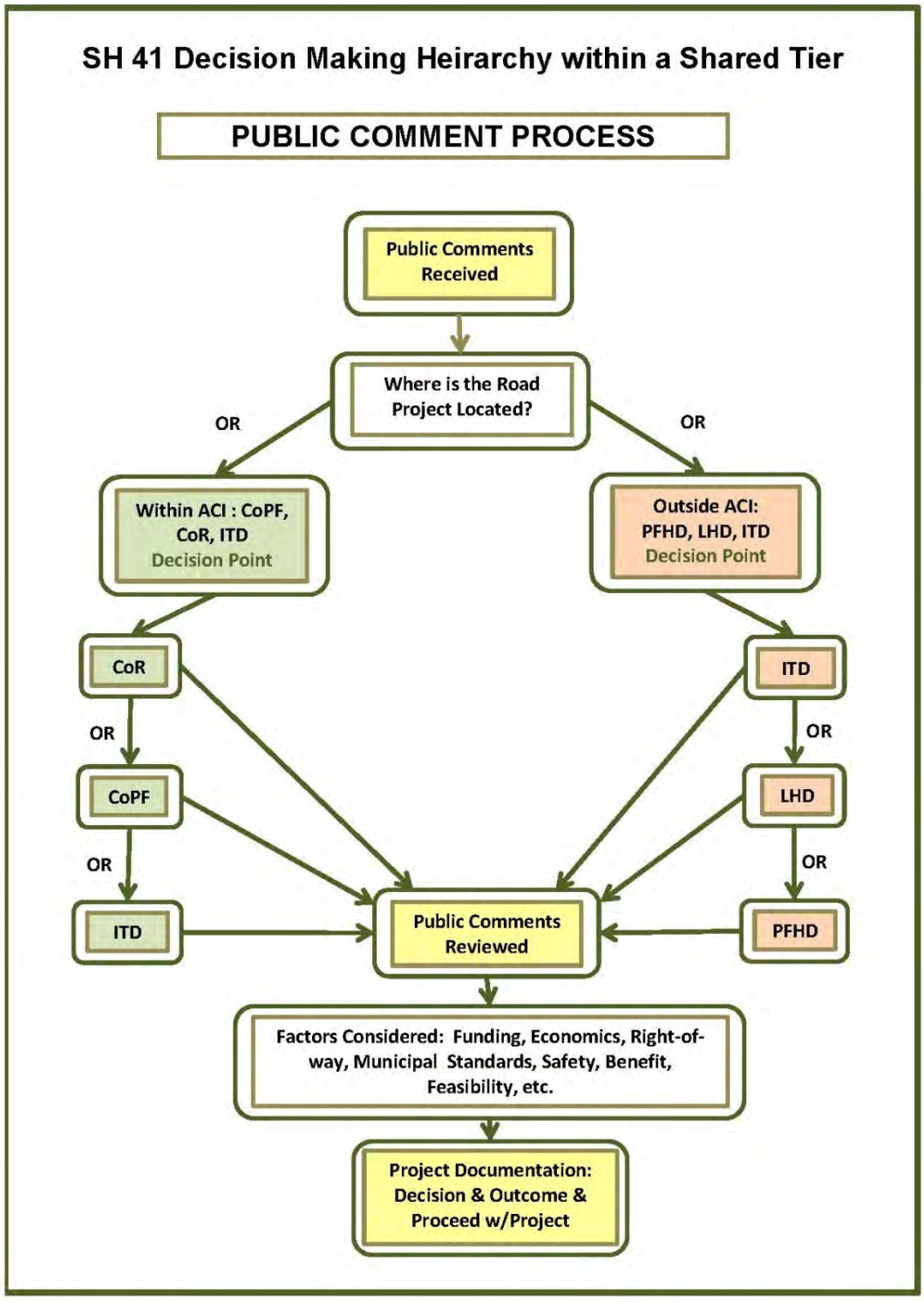


Figure 3 – SH 41 Corridor Highway District Boundaries

Figure 4 – SH 41 Corridor Shared Tier Public Comment Process



Corridor Study Area Was Expanded

The corridor plan study area (Figure 5) is bounded by Interstate 90 (I-90) on the south, State Highway (SH) 53/41 junction to the north, Greensferry Road to the west and Meyer Road to the east. The area incorporates the entire SH 41 corridor from I-90 to the SH 41/53 junction east of the City of Rathdrum, is approximately 7.9 miles in length and approximately one mile in width on either side of Highway 41. The plan update connects the Cities of Post Falls (south) and Rathdrum (north), with agricultural uses still being practiced within the corridor. Both communities' Areas of City Impact (ACI) are within the study area, with unincorporated Kootenai County in the middle.

Population Growth

Population growth within Kootenai County has continued to change over the last ten years and can be referenced through the US Census Bureau decennial data. The overall growth of all the urban area cities together grew a total of 18.61% from 2000 to 2010 with each jurisdiction growing at different rates. During the past ten years there has been an average annual growth rate of 4.801% in the City of Post Falls, 3.549% in the City of Rathdrum and 2.40% within the County itself.

The update reflects the average annual growth rate based on the US Census Bureau decennial data over the last ten years (2000 to 2010).

Within Kootenai County, the total percent change in jurisdictional growth from the year 2000 to 2010 is shown in Figure 6.

Population data obtained through the US Census Bureau, decennially (every ten years), in between years the MPO estimates the population growth based on the annual percentage of growth that has occurred and is projected into the future, compounded annually, until the next decennial census is completed. Anticipated population growth for the Kootenai County and the cities within the SH 41 corridor are shown in Table 1.

Figure 5 SH 41 Corridor Study Area
Source: Google Maps

Figure 6 - Population Growth

Percent Change 2000-2010

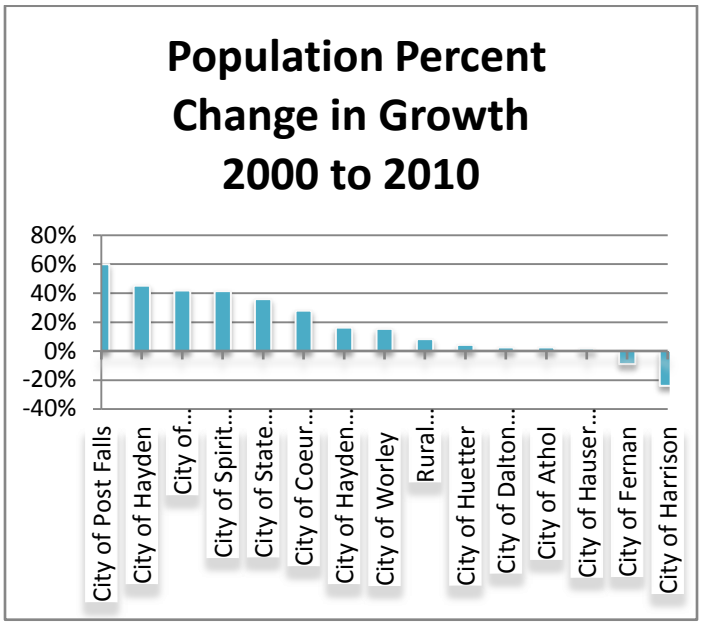


Table 1 - Population Growth within

Kootenai County

CITY	2010 POP	2014 POP	2020 POP	2035 POP	Historical Average ANNUAL % GROWTH
Kootenai County Total	138,494	152,716	178,280	273,566	2.40%
Rathdrum	6,826	7,848	9,674	16,324	3.55%
Post Falls	27,574	33,263	44,071	89,050	4.80%

CHAPTER 2 – LAND USE

Existing Comprehensive Plans and Zoning

Each jurisdiction operates under their own adopted Comprehensive Plans and Zoning Ordinances. In general the zoning applicable to the SH 41 corridor designates a majority of the land (generally located north of Prairie Avenue) for agricultural purposes. Commercial development is primarily located adjacent to Highway 41 within the cities of Post Falls and Rathdrum, with residential land uses planned for those areas extending east and west of the commercial areas.

Within the SH 41 corridor there are five jurisdictional authorities that are directly affected by land use plans and zoning; Idaho Transportation Department, City of Post Falls, City of Rathdrum, Kootenai County, Post Falls Highway District, and Lakes Highway District.

Development Trends

During recent years, pressure for commercial development along SH 41 has increased primarily along the corridor west to Greensferry Road; and from I-90 north to Prairie Avenue. Commercial activity is expected to continue to expand north of Prairie Avenue to Rathdrum. The rural area from Hayden Avenue north to the City of Rathdrum is expected to continue to grow with commercial and single family residential development, while also consisting of some forms of open space.

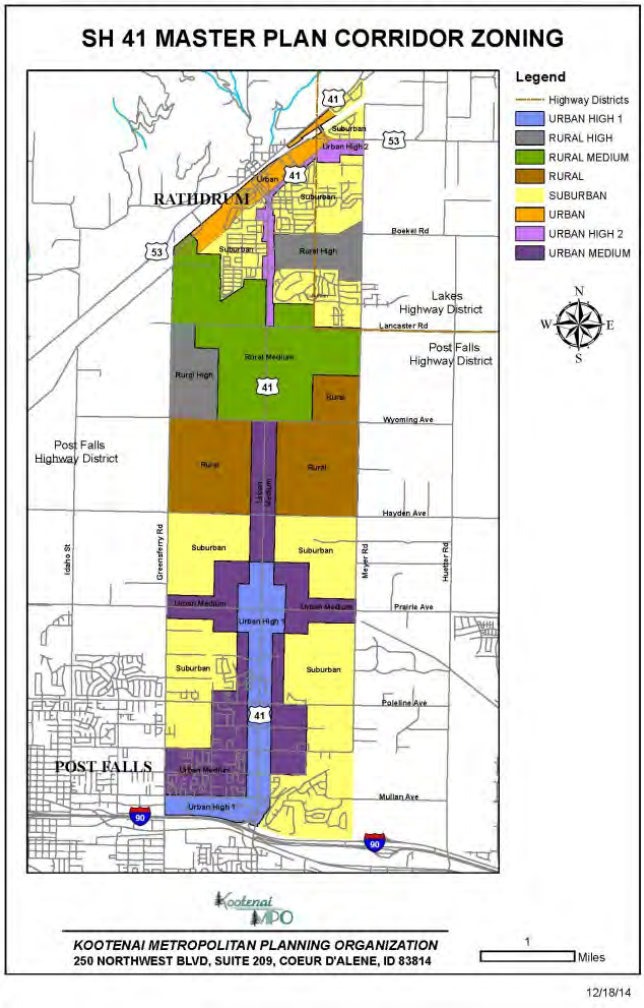
Given current development trends, the Cities of Post Falls and Rathdrum are expected to grow significantly. Increases in retail, high tech manufacturing, and industrial employment will follow these trends, with resultant traffic increases occurring throughout the study area.

Land Use Development Concepts

The concept of the ***Compact Mixed Use Plan*** was followed during this update. KMPO staff met with the local jurisdictions for the refinement of the land use plan.

The Compact Mixed Use Plan allows for a mixed-use overlay of the entire corridor within all zones as shown in Figure 7 below:

Figure 7 - Combined SH 41 Corridor Mixed Land Use Map



Urban Residential Land Use

Areas are intended to provide the opportunity for development of an environment, which includes a variety of land uses, residential densities, public services, and facilities. Urban residential areas are primarily a residential category of single-, two- (duplex), and multi-family development integrated with neighborhood commercial, public, and recreational uses. Agricultural uses will be considered secondary and will be very limited. Open spaces will most likely consist of parks and school grounds, but can include passive recreational open spaces. Low-to-moderate levels of noise will exist in urban areas due to the intensity of activities and the volume of traffic generated. Higher density residential uses (multi-family) will be located near arterial and collector streets. Multi- family structures may be a transitional use between commercial and single-family developments.

Suburban Residential Land Use

This category is intended to provide the opportunity for development of residential, agriculture, and open space in a "country-like" setting. The typical land use mix found in rural areas includes agriculture, grazing, large lot single-family residential development, and large unique or environmentally sensitive lands. The aesthetic setting of this land use category will be open space, large cultivated fields, pastures, and natural areas. Few public services will be provided in these areas and most homes will be served by private water systems (wells) and on-site sewage disposal systems (septic tanks and drain fields). Commercial, retail, and industrial development could be allowed with appropriate controls.

Currently, within the SH 41 corridor single-family housing units fall under the required 5 acre minimum unless lots are connected to a municipal water reclamation system. The water system cannot exceed the maximum number of persons per household. Clustered housing can occur within the suburban residential land use.

Agricultural Land Uses

The agricultural land use category is intended to provide a means to protect land primarily for agricultural uses and to identify lands presently farmed or can potentially be farmed as a source of income. The predominant use of land within this category are cultivation, grazing, animal husbandry, horticulture, and agriculturally related commercial activities. The aesthetic setting of agricultural areas is open space, large cultivated fields, pastures, and natural areas. Homes will be served by private water systems (wells) and on-site sewage disposal systems (septic tanks and drain fields).

Commercial Land Use

The commercial category is intended to provide the opportunity for development of commercial uses directly related to major throughways, specifically community and regional shopping and retail uses. Residential use in commercial areas may be considered compatible through the use of proper screening and performance standards. Consumer goods offered in strip development frequently differ from those found in shopping centers. Commercial areas feature high-intensity uses that generally produce high automobile traffic. Traffic congestion may create air quality

problems, especially along strip commercial development if not adequately designed.

Industrial Land Use

The Industrial zone permits light industrial uses such as warehousing, assembly, processing and light manufacturing as permitted uses and conditionally allows heavy industrial uses such as fabrication, manufacturing, refining and processes that produce external effects such as noise, emissions, outside activities. The industrial zone is applied in areas designated suitable for industrial development in the jurisdictions Comprehensive Plan.

Neighborhood Centers

A Neighborhood Center is intended for concentrated mixed-use development in a suburban location. This sub-regional center will provide a mix of land uses that will bring jobs, shopping, and cultural activities closer to where people live. The types of uses include retail sales, services, government and business offices, recreational facilities, higher-density residential development, and other uses to serve the needs of the surrounding population.

Community Design

Mixed land use design to aid in the walkability within a mile and a half of a central area, have become popular in the last decade, for example; combining retail on the main floor with condominium, apartments or business offices above. Non-motorized transportation has also increased in popularity for travel and recreation within the community.

In-fill Development

In-fill development provides an economic tool for revitalizing underutilized areas of the community. In-fill development is the process of developing or redeveloping vacant or underutilized parcels of land within existing developed areas that are already provided with public services and utilities. In-fill development helps to reduce the cost for extension of public service and utilities.

Aesthetic Corridor

An aesthetic corridor plan would protect the visual appeal along Highway 41. Such a plan would be an overlay zone with standards that would apply within one-quarter mile of Highway. Aesthetic corridors provide special design standards for visual appearance (including signage, landscaping, site design, and the provision of open space) along the major transportation route to help maintain and enhance a quality image of the Rathdrum Prairie and associated cities.

Open Space

Equally important on the Rathdrum Prairie is the desire for open space. Open space designation can be used for passive (natural vegetation areas), active (golf courses), or agricultural uses. Open space can be viewed as building set-back areas and landscaping a project. Quality of life issues have become a central theme within land use planning efforts and are expected to continue to drive future planning within the Rathdrum Prairie. The desired balance of open space in contrast to development depends upon the desire of the communities and their subsequent requirements.

Open space area is intended to retain and provide for a system of under developed areas, and parks through non-motorized linkages. The open space may be used for outdoor recreation ranging from unobtrusive nature trails and bicycle paths to baseball fields, golf courses, or agricultural uses. Open space is designated adjacent to railroad crossings, around mining uses, or commercial areas and can be used to provide separation of land uses. Open space is typically included in residential and commercial developments and incorporated into site design and maintenance. Open space areas are planned and governed based upon accepted zoning and comprehensive plans.

Transfer/Purchase of Development Rights

The transfer or purchase of development rights is a technique to preserve open space. These programs allow development rights to be either sold by one property owner to another or transfer from one property to another where development can be built at a higher density.

New Housing Concepts

New design ideas and housing solutions can be established for efficient utilization of land, the provision of utilities, and reduction of sprawl. Techniques may include clustered development, zero lot-line development, accessory units, infill housing, and small lot development. Applying design guidelines to these new housing types can help ensure that they are compatible with their neighbors and maintain high design quality.

Clustered Housing Ordinances

Clustered housing opportunities are used as a way to provide greater flexibility and better site

planning, primarily for residential development. These types of developments are particularly successful in rural areas.

Transportation / Traffic Development Impact Fees

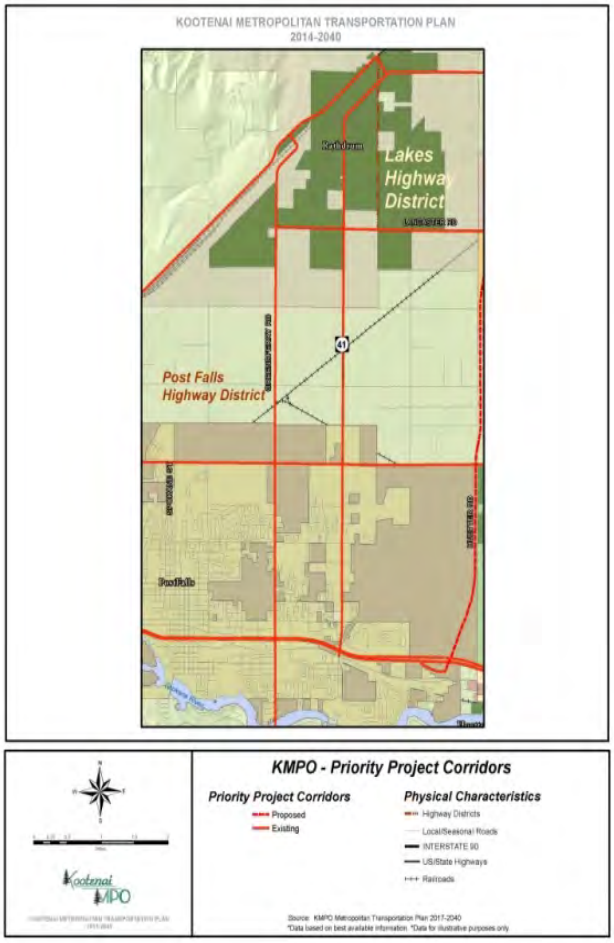
Impact fees are charges imposed on new development by a local jurisdiction to help offset the costs associated with off-site transportation improvements/facilities and services made necessary by that new growth and development. Impact fees are established by each jurisdiction through a well-defined process that must be approved by the respective elected board or council.

Priority Corridors

KMPO identifies SH 41 and Greensferry Road in the Metropolitan Transportation Plan (2012) as two of the priority north south transportation corridors in our region as well as Lancaster Road as one of the east-west corridors. Federal-aid funding for major capacity improvements (additional lanes) are intended to be focused on priority corridors over the next 20 years. This strategy does not preclude the use of Federal-aid funding for the other complimentary roadways in the network, nor is it meant to imply that only those roads will receive capacity improvements. KMPO also intends to select projects for Federal-aid funds that provide safety and operational improvements throughout the area over the next 20 years.

Projects that add capacity to other roadways may also be developed using non-federal funding sources.

Figure 8 – Priority Corridor Map



Land Use Issues

Land along Highway 41 is considered by many as prime commercial property. Some commercial development along the highway has not included the use of secondary access roads to serve local traffic needs. As a state highway, SH 41 is expected to move traffic quickly and efficiently through the community; however, due to numerous conflict points caused by the use of direct access to individual properties, the efficient flow of traffic along the corridor is impeded.

The desire of the community has been that as development occurs, direct access to the corridor should be limited and redirected to roads that provide access to SH 41 at arterials. Retention of open space was preferred through mixed-use development.

Part of the land use discussion involves the construction of backage roads adjacent to both sides of SH 41 at ¼ mile and ½ mile spacing. Scenarios were prepared by KMPO to compare the effects the backage road on the overall roadway system. They generally result in lower cost access to developing properties, while at the same time protecting the operational capacity of SH 41 and the visual recognition needs for commercial properties. Please see the Backage Road Analysis section in the main SH 41 Corridor Master Plan Update.

Street Connectivity

Street connectivity is an essential key to accommodating local traffic circulation, without placing an undue burden on Highway 41 as the primary access to properties within the study area. East-west arterial roads between Coeur d'Alene and Highway 41 are presently limited to Interstate 90, Prairie, and Hayden Avenues, Lancaster and Boekel Roads and SH 53. A few secondary north-south connector roads exist in the area that provide north/south routes. These are: Greensferry Road, Idaho Street, Huetter Road, and Meyer Road. These north-south roadways do not provide a connection to I-90, however, they do provide alternate routes for north-south movement, along with the east west roads for local traffic in and between the communities of Post Falls and Rathdrum.

With the addition of backage roads (secondary access roadways) and other east-west roadways for local traffic these additional routes are expected to help alleviate congestion along SH 41.

Where People Live, Work and Shop

Travel patterns in the region are primarily defined by where people live, work and shop; even though there many other types of trips that people make for medical, recreational and social purposes. Traveling to and from homes to places of work and retail centers dominates the number of trips on regional transportation network and therefore where congestion most often occurs. Maps are provided in the main report to show the 2010, 2020 and 2035 main demographic patterns in Kootenai County.

Opportunities for Public Transportation

Current public transportation services within the study area is limited to Citylink fixed route service, Kootenai Health and Citylink Paratransit. Service, which are highly dependent on service area demands and availability of funding. The Coeur d'Alene Tribe and Kootenai Health partners with Kootenai County and the local jurisdictions to provide the current free transit service. There are STA Vanpools available to commuters with Spokane area destinations. Some private car/van pooling and paratransit services exist within the corridor; however, there is no Citylink service along SH41 at this time. Current service demand has grown and are expected to continue to increase.

Pedestrian and Bicycle Improvements

Within the SH 41 corridor proposed transportation improvements are recommended. Currently, non-motorized facilities are not provided on most roadways. Shared or joint use pedestrian/bicycle facilities are recommended for development with each new or reconstructed roadway segment of SH 41.

Safe, convenient, and strategically developed joint use facilities connect and foster vibrant communities and attractive neighborhoods, which is what communities in Kootenai County envision for their citizens.

The City of Post Falls has requested that non-motorized pathways be constructed on both sides of SH 41. ITD has included in their upcoming SH 41 the construction of a joint use trail on the east side of the highway. The corridor Plan recommends retaining sufficient right of way on the west side of SH 41 to provide a future joint use trail, which would be constructed and maintained by other.

In addition, the City of Post Falls and a number of county residents expressed a desire for a grade separated non-motorized trail crossing of the future Prairie Trail and SH 41, near Prairie Ave. The identified local priorities for continued expansion of the non-motorized network and provide safer access to/from the SH 41 corridor.

There are several factors that will need to be evaluated prior to recommending such a facility into the SH 41 Corridor Plan. This includes, Union Pacific Railroads existing and ongoing use of the current railroad right of way west of SH 41; travel demand on the trail that would justify the construction costs; connectivity to the existing and future trail plan; etc. These discussions will continue into the future and may be the subject of a corridor plan amendment in the future.

There is currently no dedicated funding available for a grade separated non-motorized structures, however, funding may be obtained through; future ITD Transportation Alternatives Program funds, by private development, Urban Renewal, City funds, grant projects, etc.).

Planned Improvements

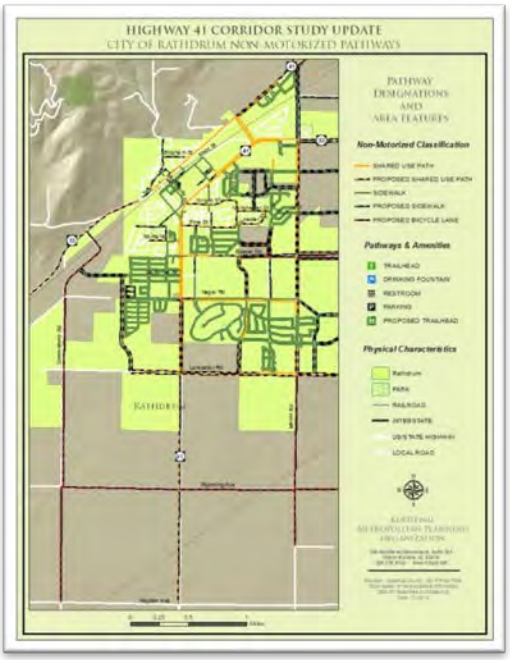
Improvements Needed to the Corridor

State Highway 41 is planned to be a divided highway from Mullan Ave. to Boekel Road. (see typical roadway sections).

Limiting access along SH 41 is crucial in the forecast years with increasing level of traffic in, to help alleviate congestion delay along the corridor. Signal spacing will be at half and one-mile spacing's with unsignalized intersections being restricted to right-in right-out only on and off the east-west roadways between I-90 and Boekel Road. This is discussed in more detail in the Access Control Management section in the main document.

Infrastructure

Community wastewater treatment systems are not by policy extended to unincorporated areas of the County. This factor prohibits



areas inside the Corridor and outside the corporate boundaries of Post Falls and Rathdrum from being developed for commercial, industrial, and high-density residential purposes, until annexed into the adjoining jurisdiction. Current municipal water supply is generally limited to the urban areas of Post Falls and Rathdrum. Areas within the County and portions of Post Falls are served by Ross Point Water District and East Green acres Irrigation District. Power and natural gas services are provided within the corridor by either AVISTA or Kootenai Electric. Storm water management from impervious surfaces is currently through natural vegetative areas and is not controlled. Future use of stormwater management techniques, such as grass percolation (biofiltration) swales, are typically included in all new developments.

Intergovernmental Coordination

Inter-governmental coordination occurs through various means including Kootenai

County Area Transportation Team (KCATT), Area of City Impact (ACI) agreements, the Highway 41 Overlay Zone, the State Highway Access Control, and the Highway 41 Memorandum of Understanding.

However, as project improvements are programmed in the corridor, continued jurisdictional coordination is needed to address land use and transportation issues related to Highway 41. The meetings allow for information dissemination and participation by all attendees setting the stage for a clear understanding of development concerns and criteria. Continued update and maintenance of the regional travel demand model is needed to accurately reflect ongoing changes in development and traffic conditions brought about by growth and development.

Land Use Areas, Sub-Categories & Densities

Detailed land use is one of the primary inputs into the regional travel demand model. Accurate information on existing and future planned land use is the basis for KMPO's evaluation (as a metropolitan planning organization) of existing performance and is necessary to ensure that regional transportation investments are made appropriately.

Land use areas, sub-categories and densities within the corridor were changed slightly in this update to reflect continuing planning efforts and modifications to development densities similar to each jurisdiction's zoning ordinances made by the jurisdictional authority. The land use alternatives are composed of seven broad land use categories. These categories are not intended to represent specific land uses; rather, they represent a range of uses that will allow for flexibility in future development while maintaining the dominant land use characteristic.

Land use percentages of growth within the City of Post falls and with the City of Rathdrum were found to contain different growth patterns in some areas, and varying land use densities which is expected in these two communities. Each jurisdiction grows at different rates, so additional TAZ areas were formed to model the communities accordingly to match their planning and zoning along the corridor.

The following land use areas are simulated as TAZ zones for the travel demand model. The areas contain mixed land uses by percentages of the entire area.

The primary use is indicated by the name of each TAZ area within the corridor. The Highway 41 land use revised main land use areas are:

- Suburban – (Post Falls & Rathdrum Area)
- Urban – (Rathdrum Area)
- Urban Residential (Medium) – (Post Falls Area)
- Urban High 1 Residential – (Post Falls Area)
- Urban High 2 Residential – (Rathdrum Area)
- Rural – (Post Falls & Rathdrum Area)
- Rural Medium – (Rathdrum Area)
- Rural High – (Rathdrum Area)

The land uses that fall within the main land use areas are indicated by the name of each land use sub-category and the expected percentages of anticipated growth vary depending on which TAZ area they are in (See Figure 20). The Highway 41 land use sub-categories were developed with coordination with the cities, county and highway districts within the corridor, as follows:

- Office (KMPO LU: 4,14,16-19, 21 22)
- Retail (KMPO LU: 3, 23)
- Multi-Family Units (MFU) (KMPO LU: 2)
- Institutional / Schools /Churches (KMPO LU: 6-8, 10, 15, 20)
- Agricultural / Open Space (KMPO LU: 11)
- Single Family Units (SFU) (KMPO LU: 1, 9)
- Industrial (KMPO LU: 5)

Table 2 - Land Use Densities

Draft Revised – SH 41 Corridor Master Plan 2014	
LAND USE	**SIZE**
Suburban Residential	2-6 units / acre
Urban	2-6 units / acre
Urban Medium Residential	7 – 12 units / acre
Urban High 1 Residential	> 12 units / acre
Urban High 2 Residential	> 6 units / acre
Rural	< 2 units / acre
Rural Medium	> 2 units / acre
Rural High	> 4 units / acre
Retail	61 employees / acre
Office	74 employees / acre
Institutional/Schools/Churches	83 employees / acre
Industrial	31 employees / acre
Agricultural / Open Space	Varies – Seasonal Use

Field Documentation / Data Collection

Field visits were conducted during the summer of 2014 and 2015 to verify existing roadway and intersection conditions. Planning level information was collected for the transportation analysis and preliminary design level information was provided for the purpose of improvement recommendations.

Roadway/intersection channelization data / numbers of lanes, turn bays, passing areas, etc.), intersection/ driveways control types (stop control verses signal controls), roadway / shoulder widths, posted speed limits, and railroad crossings locations were noted as part of the initial field review.

Additional field visits were conducted throughout the project to supplement / verify the initial field review or assess the potential for capacity improvements at specific locations.

Travel Demand Model Overview

A forecast travel demand model is a computerized representation of the transportation and land use conditions within a community. Existing or forecast land uses are aggregated into Traffic Analysis Zones (TAZs) that typically represent major trip generators such as a residential, neighborhood, commercial, and retail developments, or work centers. The trip generation characteristics of each TAZ are identified so that the model can distribute traffic between TAZs through a computerized representation of the highway and arterial system. Note that a TAZ can also represent a connection outside the geographic area of a model, such as a principal arterial or state highway going to other areas. Field counts are taken to represent those roadways.

KMPO Travel Demand Model/Land Use Adaptation

VISUM by PTV America is a proprietary software package used by KMPO to develop existing and future travel demand forecasts on the regional transportation system. KMPO major update to the model occurred in 2012 for the Kootenai Metropolitan Transportation Plan. The KMPO model is routinely updated for evaluating growth and development impacts, potential transportation investments, and updating KMPO's transportation plans. Revisions primarily focus on US Census Bureau Decennial Census, with some land use and employment changes at the TAZ level to address changing conditions. The KMPO model has been used in this study to assess the traffic impact of the proposed land use alternatives and test capacity improvements within a mile to the east and west of the Highway 41 Corridor. The SH 41 Corridor model set is driven by the KMPO regional model exclusively for the SH 41 corridor. No revisions have been made to the regional KMPO model outside of this project study area.

Land Use Trip Totals

U.S. Census data indicates the population for the City of Post Falls has increased by approximately 4.8 percent per year during the last ten years and the City of Rathdrum has increased by 3.6 percent per year over the same time period. Staff from the Cities, County, and State anticipate land use growth within the Highway 41 corridor could progress at a similar rate, if utilities and the transportation infrastructure can be constructed to support development. As such, the forecast land use alternatives were adjusted to be consistent with the growth rates identified through the U.S. Census for the City of Post Falls. The resulting trip totals and traffic assignments (volumes on Highway 41) were much more appropriate for a 20-year plan and were reasonable when compared with historical traffic data. Table 5 below, highlights the full build out trip totals for the 2010 existing, 2014, 2020 years and the 2035, 20-year horizon trips for within the SH141 area corridor only.

Table 3
Summary of Morning and Evening Peak Hour trips

Model Year	AM PK HR TRIPS	PM PK HR TRIPS
2010 Base	7,322	8,723
2014 Build	10,022	8,456
2020 Build	9,626	11,614
2035 No-Build	17,586	22,178
2035 Build	19,169	24,262

Forecast Traffic Model Volumes

Forecast traffic volumes were developed from the KMPO travel demand model for each of the future land use alternatives. As indicated, the trips generated by TAZs (internal and external) are assigned to a computerized representation of the highway and roadway system within the model. The volumes are calibrated and then used in system alternative comparison.

Depending upon location, PM PK Hour modeled forecast traffic volumes along Highway 41 in 2035 will be approximately -4 to 177 percent higher than existing 2010 modeled traffic volumes. The average total growth rate through the SH 41 corridor is 63%.

Table 3

Summary of Vehicle Miles of Travel and Evening Peak Hour Volumes Along SH 41

Model Year	Total Vehicle Miles Traveled (Throughout Corridor)	Vehicle Hours Traveled tcur (Current total travel time in loaded network)	PM PK Hr Modeled Volume (Along corridor bothways)
2010 BASE	8,158.06 miles	192 hr 35 min 22 s	54,885
2014 BUILD	8,699.46 miles	208 hr 32 min 12 s	57,126
2020 BUILD	10,300.30 miles	264 hr 09 min 12 s	66,718
2035 NO-BUILD	11,932.45miles	401 hr 41 min 03 s	81,848
2035 BUILD	14,795.58 miles	342 hr 11 min 40 s	84,465

Actual Corridor Travel Times

KMPO staff drove the corridor where travel times were obtained from actual driving time measurements in the late spring of 2016. To obtain ”congested” travel times, the corridor was driven five times in the morning peak period (6:30 to 8:30 a.m.), and five times in the evening peak period (4:00 to 6:00 p.m.). The times shown represent the highest five-run time for each peak period (AM and PM) as well as the lowest five-run times (fastest travel time) for the free flow measurement. Congestion may increase during the summer travel season. See the main text document for travel times.

Model Volumes

When looking at the PM PK HR volume on the roadway segments along SH 41 from the travel demand forecast models (2010 to 2035), the highest percentage of anticipated traffic volume growth (straight line) occurs between Wyoming to Boekel Avenues, with an approximate overall average of 154 % in anticipated traffic volume growth. The next highest growth segment occurs between Wright St to the SH41/53 junction with an average of 124% in growth.

Traffic on the adjacent north-south arterials which are Greensferry Road and Meyer Road, will increase significantly. This increase is partially due to the Greensferry Road overpass having been built in 2015. Along Greensferry Road forecast traffic volumes are projected to increase in straight line growth from 115 % to 1449% from 2010 to the out-year 2035 depending upon the network link location and the specific roadway.

The travel demand forecast models predict traffic volume growth along Greensferry Road, from 2010 to the out year 2035 to increase by an average of 465 % (along the entire roadway within the SH 41 Corridor boundaries).

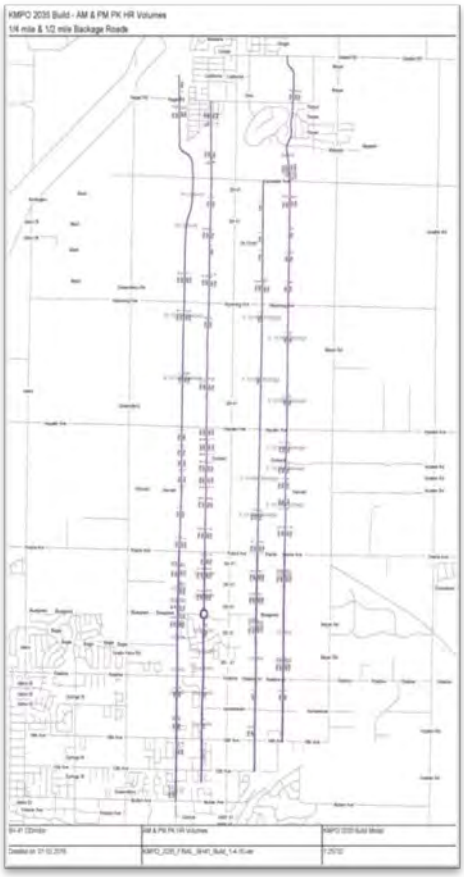
Meyer Road forecast traffic volumes are projected to increase (straight line growth) from -17 to 600% from 2010 to the out-year 2035 depending upon the network link location and the specific roadway. The travel demand forecast models predict traffic volume growth along Meyer Road from 2010 to the out year 2035 to increase by an approximate average of 35% (along the entire roadway within the SH 41 Corridor boundaries).

CHAPTER 3 - BACKAGE ROADS ANALYSIS

A network of secondary access roads is proposed with the plan to provide access to future development projects. “Backage” roads would be located approximately ¼ mile from the east and west of Highway 41 and run parallel to the highway. The quarter-mile and ½ mile backage roads would be designated as either local street or collector roadways and would generally allow private drives along the backage road corridor for access, however, other access control could be provided. The functional classification of any particular oadway would be dependent on its connectivity to the regional transportation network and the area served by the facility.

The quarter-mile backage road would extend from 12th Avenue on both sides of the highway north to Rathdrum. The quarter-mile and one-half mile roads will serve as access points to properties fronting on Highway 41 and will provide access to intersecting arterials with signalized intersections with Highway 41. The half-mile road would run from Horsehaven/20th Avenue on the east side of the highway and from Mullan Avenue on the west side to Rathdrum.

The east/west arterials connect the backage roads with Highway 41 and will be located approximately every ¼ mile between Poleline and Lancaster Avenues. Connectivity of the proposed roadways will be limited in the vicinity of railroad tracks to limit uncontrolled crossings of the rail lines. Future realignment or abandonment of the rail would allow for the completion of the parallel roadways for cross-Prairie access.



The “backage” and/or access roads are intended to be constructed to City design standards, and final design is subject to change based on the type of development, roadway demand (volume or weight of vehicles), and connectivity to the overall regional transportation system. Joint use trails should be located at a sufficient distance from the roadway so that future widening of the road will not affect perpendicular alignments. ITD would not have jurisdiction over access management of the backage roads.

Scenario Analysis Recommendations

- The ½ mile backage road (Average ADT 359) has somewhat higher daily traffic volumes than the ¼ backage road (Average ADT 261) in the 2035 forecast year.
- The analysis indicates when looking at traffic volumes, it would be better to build the ½ mile backage roads first, then the ¼ mile backage roads, if the project were to be phased for construction.
- With improvements to SH 41 the traffic increases along SH 41 by approximately +4287 cars/day in the 2035 build scenario and the V/C ratios are above 75% at some intersections. Making improvements to SH 41 increases traffic along SH 41 (4287 ADT) and Lancaster Ave.(2502) however, it lowers volumes on the other main arterials within the corridor, along Hayden Ave (2741), along Meyer Road (876), along Prairie Ave (823), along Greensferry Road (696), and along Mullan Avenue (558 ADT).
- The Huetter bypass project and improvements to SH 41 have the most significant impact on the entire roadway system. By building the Huetter bypass project, making improvements to SH 41 and building the backage roads in the 2035 out year, it is the best overall solution to helping to improve regional congestion, safety and traffic flow within Kootenai County.

CHAPTER 4 - TRAFFIC OPERATIONS/ MEASURES OF EFFECTIVENESS (MOE) & LEVEL OF SERVICE (LOS)

This section discusses the methodologies used to evaluate the traffic impacts of the proposed land use alternative and level of service (LOS) and provides a summary of results / conclusions.

Roadway Improvements

A preliminary analysis of existing and future traffic conditions indicates that significant capacity improvements would have to be provided to accommodate traffic volumes generated by the proposed alternatives. A Project Team consisting of ITD, the Cities of Post Falls and Rathdrum, Kootenai County, and the Post Falls Highway District was assembled to discuss the most reasonable and financially feasible capacity projects for the Highway 41 corridor. An implementation improvement plan/approach was developed to improve the corridor and is discussed in detail later in this report.

Turning Movement Counts

Turn Movement Counts (TMC’s) were taken by Quality Counts using Miovision® technology cameras at most of the 67 intersections included in this study. Some other manual counts were collected for the PM PK HR at some minor intersections by KMPO staff.

The TMCs were input into an excel spreadsheet workbook along with the travel demand model volumes for 2014 and the out-year 2035. The existing 2014 model volumes, the TMC's and the 2035 forecast model volumes were factored using the Furness method within the workbook. The volumes were then balanced within the spreadsheet and the output volumes were input into Synchro for the analysis for this study. KMPO worked with ITD to ensure conformity.

Synchro Analysis - Intersection Level of Service

Intersection operations were gauged according to levels of service (LOS) methodologies and procedures identified by the Highway Capacity Manual (TRB Special Report 209, 2000). Levels of service are a qualitative measure of traffic flow and congestion at intersections and on roadway sections. Levels of service are separated into six grades that range from LOS A, indicating free-flow traffic, to LOS F, indicating extreme congestion and long vehicle delays:

LOS Criteria:

LOS A – Free Flow
LOS B – Stable Flow, Slight Delays
LOS C – Stable Flows, Normal Delays
LOS D – Stable Flow, Long Delays
LOS E – Unstable Flow, Intolerable Delays
LOS F – Forced Flow, Failures

Intersections that operate better than LOS C are anticipated to have adequate mobility and have capacity for additional traffic growth. Intersections that operate at LOS D have adequate mobility, but have limited growth potential. Capacity and mobility deficiencies begin to occur at LOS E, and as an intersection ceases to function appropriately at LOS F. ITD indicates LOS D as the lowest acceptable operation for intersections in a planning level study.

Synchro,Version 9.1.904.125 by Trafficware was used to analyze peak hour LOS. This application is based upon the methodologies described by the Highway Capacity Manual.

Corridor Operations

Synchro®, Version 9.1.904.125 by Trafficware also has the ability to provide corridor MOE's based upon existing and forecast traffic volumes and conditions (intersection controls, road capacities, etc.). Average vehicle speeds, travel times and corridor LOS are used to judge the overall operation of a corridor because it accounts for impacts that do not occur at intersections, such as delays that result from traffic accessing a roadway at driveways, etc.

This analysis was generated for the entire SH 41 corridor between Seltice Way and the SH 41/53 junction based upon existing traffic conditions and each of the future forecasts. Summary results average travel speeds, total travel times and arterial LOS are provided in the study update for comparison. Note that this type of information is primarily used for the purposes of comparison of speed, as travel times will have a certain degree of error when compared to actual measurements.

Synchro Reports

The Synchro Reports for the signalized intersections for the 2035 Build year can be found in the Appendices in the main document.

Accident Summary

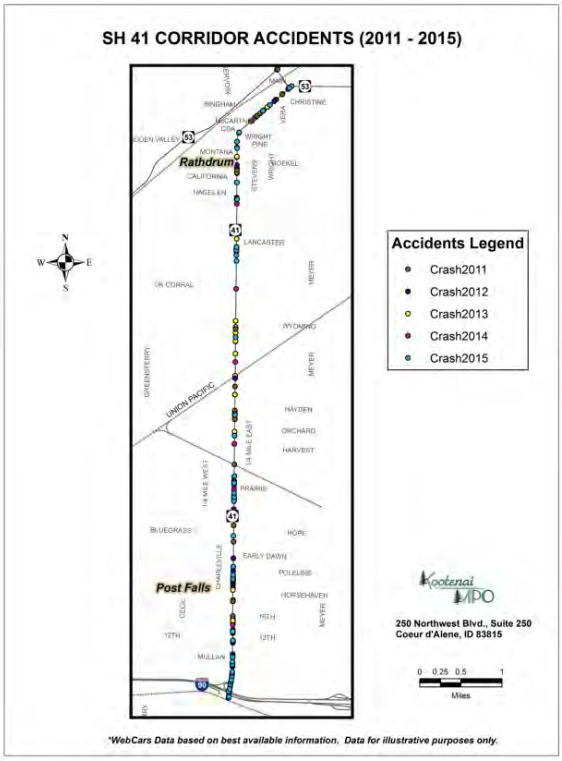
The Idaho Transportation Department (ITD), Office of Highway Operations and Safety maintains accident histories for all state highways. The collision histories were taken from their database between the years 2011 thru March of 2015.

Accident rates below two accidents per million vehicle miles are nominal and are not normally classified as High Accident Corridors (HACs). Accident rates of between 2.0 and 3.0 should be further evaluated and may be classified as an HAC, depending upon location.

Accident rates that exceed three accidents per million vehicle miles, should be identified as areas of concern and can qualify as an HAC. The highest accident location is from Seltice Way to Mullan Avenue with an accident rate of 2.76. Sixteenth Avenue to Poleline Avenue is the second highest with an accident rate of 2.07, with Mullan Avenue to 12th Avenue at 1.55 and Stevens Street to SH 53 with 1.49.

Figure 9 - SH 41 Corridor Accidents

(2011- March 2015)



Capacity Improvements

Several capacity improvements and refinements are proposed as a function of this plan for Highway 41 and the primary intersecting roadways. The improvements were developed based upon the Project Team meetings with ITD, the Cities of Post Falls and Rathdrum, Kootenai County, and the Post Falls Highway District. The improvements/refinements were determined to be reasonable and may be implemented based upon a variety of public and private funding sources.

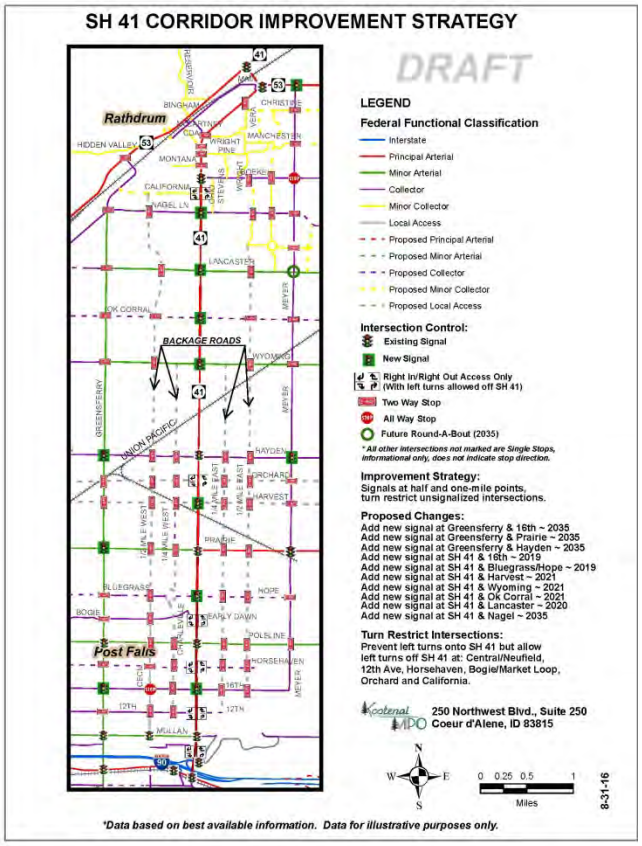
The improvements are proposed to accommodate the growth in traffic that is likely to occur as identified in this Plan, due to the normal increase of traffic on Highway 41 and the continued growth and development that will occur within and between the Cities of Post Falls and Rathdrum.

Access Control Management & Implementation

Idaho Transportation Department (ITD) has developed new access controls for the Idaho State Highway System. The Highway 41 Corridor Master Plan is based upon these guidelines, but has been modified / revised to incorporate the recommendations of the Project Team, which includes representatives from ITD. Highway 41 will be a principal arterial with multiple travel lanes. The ITD access guidelines are outlined under Idaho Administrative Code (IDAPA) IDAPA 39.03.42 and are included in the appendices of this plan. The IDAPA control criteria policies dictate that intersections (with or without signals) will be allowed every ½ mile within urban areas and every 1-mile within rural areas. As such, signals are only allowed every ½ mile on Highway 41 from Mullan Avenue to Harvest Avenue (urban section), and every 1-mile, from Harvest Avenue to just south of Rathdrum (rural section). The access modification includes the allowance of an un-signalized right in/right out only access intersections every ¼ mile on Highway 41 between primary signalized intersections, along the entire highway between Seltice Way and SH 53. This approach provides the following:

- Limiting the number of conflict points;
- Regulating the spacing and design of approaches, turnouts, and intersections, medians and median openings, and traffic signals and interchanges;
- Regulating the encroachment within state highway rights-of-way for signs, memorials, and decorations, urban improvements, landscaping, farming, and irrigation, and turnouts and parking facilities; and
- Regulating the encroachment within the state highway rights-of-way for utility installations, adjustments, relocations, removals and maintenance.

Figure 10 - SH 41 Corridor Improvement Strategy



Idaho Department of Transportation District 1 Requirements:

One of the access management principles emphasized in the IDAPA rule is to "Reduce conflicts associated with access points through the application of channelization, auxiliary lanes, joint-use approaches, frontage and other local roads, restricted on-street parking and off-street traffic circulation."

The goal of access management along SH 41 is to allow efficient and effective access to adjacent properties in a manner that encourages economic growth while at the same time providing good regional mobility and road network safety. The intent is to implement the access management principles in order to result in the least direct access to SH 41 between Seltice Way and Boekel Road as possible. If all or most of the properties adjacent to SH 41 take access from city streets or county roads rather than directly from SH 41 there will be equal economic opportunity for all properties.

The highway operational results of implementing access management principles will be a safer highway with consistent travel speeds and high capacity.

Access Management:

- Improves safety
- Increases mobility
- Increases capacity
- Provides equal economic opportunity

Development Standards

No development of private property driveways will be allowed on Highway 41. Zoning Ordinances of the underlying jurisdiction govern the minimum setback for a development or private property driveway on an access or backage road. Private driveways will not be allowed on the backage roads, instead alternate access will be provided. Access will be restricted onto the backage roads since Setbacks for structures from Highway 41 are 150 feet from centerline, regardless of the underlying zone setback requirements. No property (which may consist of several contiguous lots or parcels) will have more than two driveway locations unless additional driveways are proven necessary on the basis of an engineering traffic study.

Crossover Easements

Access control can also be accomplished through the shared use of common driveways and parking areas. Joined parking areas permit circulation between stores/uses without accessing public roadways. Shared rights are allowed through the use of reciprocal easements.

Traffic Signals

Traffic signals are currently located on Highway 41 at Seltice Way, the westbound I-90 ramp, and Mullan, Poleline, Prairie, and Hayden Avenues. Traffic signals are proposed at 16th, Hope, Wyoming, and Lancaster Avenues. The signals would allow for protected/exclusive left turns, which mean that designated left turn lanes would be provided/ constructed on all intersection approaches. Designated right turn lanes would be provided at arterial intersections on both, Highway 41 and the cross collector / arterial streets.

Roundabouts are being designed and constructed at various locations within Kootenai County. Within the 2035 regional model there are over 15 planned or already built roundabouts. Roundabouts are an alternative to signalizing an intersection.

ITD is open to roundabouts at the lower speed intersections; however, roundabouts would be required to meet all design criteria for state routes as well as suitable for the proposed 4 lane cross section.

Planned Roadway Projects

State Highway 41 is currently a two to four lane roadway with generally 100 foot right-of-way (ROW) between Seltice Way and Poleline Avenue. North of Poleline Avenue, the highway reduces to two lanes with varying ROW to the City of Rathdrum. Currently there are left turn lanes provided at; Mullan Avenue, 16th Avenue, Poleline Avenue, Market Loop/Early Dawn, Prairie Avenue, Hayden Avenue, Wyoming Avenue, Nagel Lane, Boekel Road, Montana Street, McCartney/Wright Streets, Vernon Street, Vera Street, Main Street and the junction of SH41/53.

The plan proposes to improve State Highway 41 to a divided highway with four lanes from Seltice Way to Boekel Road, with a 100 to 140 foot right-of-way. The newly constructed section from *Mullan to Prairie Avenue* would have two - 12 foot wide lanes, two - 14 foot lanes, two foot curb and gutter, 11 foot swales on both sides of the roadway, a 12 foot bicycle/pedestrian pathway on the right side of the SH 41 roadway, with a 16 foot median restriction that will only allow left turns at principal roadways and the future selected ½ mile signal access locations (16th, Bluegrass/Hope). This section is scheduled for construction in 2019.

The newly constructed divided roadway section from ***Prairie Avenue to Boekel Road*** would have four - 12 foot wide lanes, an 11 foot swale on both sides of the roadway, a 12 foot bicycle/pedestrian pathway on the right side of the SH 41 roadway, with a 16 foot median restriction that will only allow left turns at principal roadways and the future selected ½ mile signal access locations (Harvest Avenue and Ok Corral). The section from Prairie Avenue. to Boekel Road will be a divided highway. This section is divided into two sections for construction; Praire Avenue to Lancaster Avenue and the section; Lancaster Avenue to Boekel Road. Both sections are scheduled for construction in 2021.

Future Improvements to SH 41, *from* ***Boekel Road to SH 53*** is planned to have three - 14 foot wide lanes (with a center two way left turn lane) exclusive left turn lanes at the intersections, 11 foot swales on both sides of the roadway, two foot curb and gutter, and a 12 foot bicycle/pedestrian pathway on both sides of the SH 41 roadway. No turn restrictions are planned at this time for this segment of the roadway. *This section is not included in the current upcoming construction scope and will be addressed by ITD, at a later date, sometime after 2021.*

The segment from ***Seltice Way to Mullan Avenue*** *is also not included in the scope of construction along SH 41 at this time. The portion of corridor between Seltice Way and Mullan Avenue though identified for future restrictions at Neufield/Central with SH 41 further analysis of this intersection will occur with ITD's future study of the I90 corridor and potential modifications of the Exit 7 interchange. That segment is dependent upon the scoping study currently underway by ITD along I-90 from Washington State Line to 15th Street and will most likely include the design for this section of SH 41. Contact ITD, District 1 for more information.*

Right of way required for the upcoming construction projects along SH 41 will be determined during the design process prior to the construction from Mullan Avenue to Boekel Road. The first phase of construction is planned for 2019, from Mullan Avenue to Prairie Avenue.

Questions regarding right-of-way should be directed to ITD, District 1. See typical roadway sections Figure 11 of this report.

Left turns from SH 41 would be allowed at the signalized locations, but not from the local cross streets where no signal exists on SH 41. The local cross streets would provide right-in, right-out access only at; Covington/Neufield, 12th Avenue, Horsehaven Avenue, Bogie/Market Loop/Early Dawn, Orchard Avenue, and California Street.

During the public outreach, many questions arose concerning the right-of-way required for the projects along SH 41. ITD is in the process of hiring a consultant to develop the design for the construction projects scheduled along SH 41 from Mullan Avenue to Boekel Road. Right-of-way, design and funding questions should be directed to ITD, District 1.

Figure 11 - SH 41 - Typical Roadway Sections

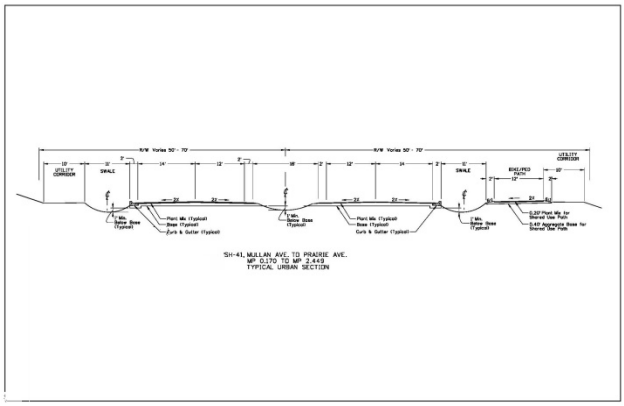
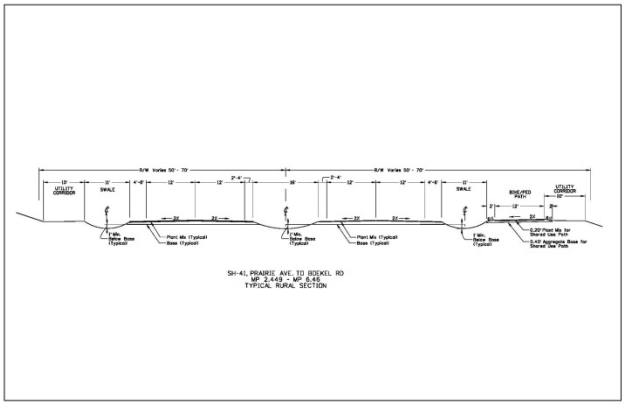
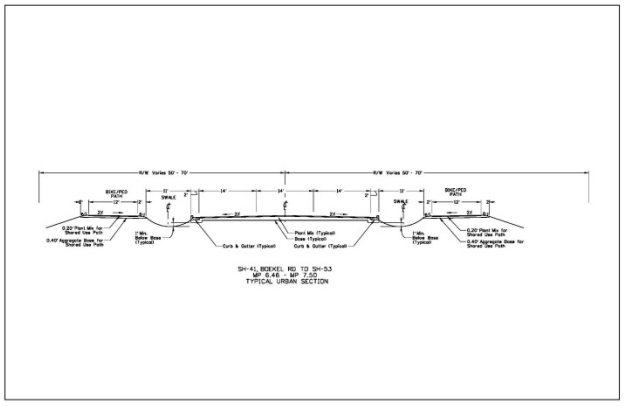


Figure 12 - SH 41 - Typical Roadway Sections (continued)





Transportation System/ Demand Management

Traffic operations can be improved and sometimes capacity can be recovered through Transportation System Management (TSM) strategies. TSM strategies are intended to increase system efficiencies and/ or reduce vehicle traffic through intelligent engineering and planning rather than constructing/ providing physical Capacity improvements (road construction, road widening, etc.). Typical examples of TSM include:

- Traffic signal coordination
- Access management
- Commercial vehicle planning/management (early morning or late evening operations)
- Incident management programs (video monitoring, quick emergency responses, etc.)

Major Utilities

Avista Utilities and the Kootenai Electric Cooperative provide electricity via several overhead distribution lines within the study area. Avista also supplies natural gas to the area. Crossing the northwest corner of the study area are two power transmission easements owned by Bonneville Power Administration (BPA) and Avista Utilities, respectively. A third easement is for Pacific Gas and Transmission /Northwest pipeline is adjacent to the power easements. Yellowstone Pipeline also has a gas line easement in the vicinity of Poleline Avenue.

Rail Transportation

Two at-grade Union Pacific railroad lines traverse the corridor near the midpoint of the study area. Both of these rail line intersections are controlled. Current efforts are under consideration to potentially realign, combine, or abandon Union Pacific rail operations within Rathdrum Prairie. Realignment would be to the Burlington Northern alignment. Discussions have included conversion of the railroad tracks into a trail system to allow pedestrians and bicycles access across this portion of the Prairie or to serve as a future transportation corridor. Railroads on the Rathdrum Prairie may have historic significance under Section 106 of the National Historic Preservation Act. If determined eligible for the National Register of Historic Places, the railroads could potentially constitute 4(f) properties.

ITD, the City of Post Falls, and the Post Falls Highway District will be working with the Union Pacific Railroad (UPRR) towards the removal of the existing spur that crosses SH 41, just north of Prairie Avenue. If such improvements are made prior to, or in conjunction with ITD's planned expansion of SH 41 in 2021, it should result in improved safety and provide a potential route for the future expansion of the "Prairie Trail."

Natural Environment

Water Resources

There are no surface water bodies within the corridor study area. The Rathdrum Prairie/Spokane Valley Aquifer is the only water resource examined in this report.

Groundwater

Protection of the Rathdrum Prairie /Spokane Valley Aquifer, the region's sole source domestic water supply, is one of the most critical planning factors for the study area. The Rathdrum Prairie/Spokane Valley Aquifer underlies the entire study area. The aquifer was formed during the last ice age more than 12,000 years ago and is composed of sand, gravel, cobble, and other glacial outwash. The aquifer begins in Idaho between Spirit Lake and the south end of Pend Oreille Lake and flows south until it reaches the middle of the Rathdrum Prairie, where it turns west and flows into Washington State under the Spokane Valley. The aquifer turns and flows north, from Spokane's Central Business District, eventually discharging into the Spokane and Little Spokane Rivers

Aquifer Management

In 1978, the Rathdrum Prairie-Spokane Valley Aquifer was declared a "sole source" drinking water supply pursuant to Section 1424(e) of the Federal Safe Drinking Act (O.L. 93-523). This designation requires all federally assisted projects to use aquifer protection measures.
In addition, it proclaims the significance of this groundwater resource to the region and support for local protection efforts. In 1980, the Rathdrum Prairie / Spokane Valley Aquifer was designated a Special Resource Water in the Idaho Water Quality Standards and Wastewater Treatment Requirements. This resulted in increased protection for this resource.

Hazardous and Waste Materials Considerations

The location of the aquifer directly below the study area should be a primary concern when establishing land use and transportation plans. The aquifer is not an indefinite resource and protection of the groundwater resource will help maintain a useable supply of water. According to a report published by the Department of Environmental Quality in 1991, potential sources for groundwater contamination are activities that use agricultural chemicals, petroleum handling and storage, landfills, hazardous materials and transportation/spills, and subsurface wastewater disposal systems such as septic tanks and drainfields. Prevention of water quality degradation through careful planning and consultation with water quality officials is a top priority for Kootenai County and the entire study area.

Topography and Geological Hazards

The terrain within the study area is relatively flat, gently declining in slope from north to south, and supports all types of development including residential, commercial, and industrial uses. Soils in this area are adequate for sustaining development and disposing of stormwater/ wastewater. They are also found to be a useful building material. However, the extreme permeability of the soils and the presence of the aquifer greatly diminish the opportunity for effective subsurface wastewater treatment on-site.

- Prime Agricultural Farmland: If irrigated, the Natural Resource Conservation Service classifies the majority of the study area as prime farmland. The prime farmland soils in this area are Avonville fine gravelly silt loam and Garrison gravelly silt loam.
- Frost Action: The soils on the Prairie demonstrate unique hydrological characteristics. Due to high permeability and large pore spaces, the material does not allow for capillary action in the soil and is generally not vulnerable to frost action or heave.
- Stormwater Disposal: Disposal of stormwater through dry wells and bifurcation swales is acceptable due to the permeability of the soils.
- Wastewater Disposal: The level of treatment of wastewater is not as high as in other soils types. The nitrates in the effluent are unaffected and are passed to the groundwater table quickly with little treatment.
- Building Foundations: The soils are high in strength with low potential for differential settlement. Foundations can be constructed on existing material without extensive site preparation. The bearing capacity is generally very high.

The region is identified as having four seasons with typical weather patterns. During winter months, snow pack can range from several inches to several feet on the Prairie. The flat terrain of the study area and surrounding land is characterized by mild to intense winds. It is common for blowing snow to create drifts and blizzard like conditions along Highway 41, severely impeding vehicular and pedestrian safety.

Air Quality

Air quality within the Rathdrum is regulated through the U.S. Environmental Protection Agency and the Idaho Department of Environmental Quality. Kootenai County is currently an unclassified area under the National Ambient Air Quality Standards for pollutants such as carbon dioxide, particulate matter (PM1 o), sulfur dioxide, nitrogen dioxide, lead, and ozone. With the projected increase in population and employment within the study area, and the resultant traffic *increases, particular concern should be given to traffic flow improvements and point emission controls as it relates to businesses to mitigate further degradation of regional air quality. Particulate matter as it relates to agricultural practices should lessen as development occurs on the Prairie. Ultimately, the development would produce a shift in carbon monoxide from increased traffic and may increase concerns as it relates to potential new business in the area.*

Critical Land Use and Environmental Factors

The following critical factors will play a significant role in the development and refinement of alternative developments and access: existing land use and zoning; existing facilities, such as roadways, utilities, and railroads; groundwater and water quality protections; topography; and geologic hazards.

Built Environment

- The planned concentration of commercial development along the Highway, primarily in that portion of the corridor lying within the city limits of Post Falls, will result in continued and increased reliance on auto-oriented services and shopping. Additional commercial developments within the corridor would attract area residents as well as serve as employment centers.

- Coordination of land use plans and the supporting zoning ordinances should be consistent throughout the corridor with the implementing jurisdictions.

- Realignment or abandonment of the railroad tracks in the study area could allow for conversion of these ROWs to other transportation uses.

- Subdivision of agriculturally zoned land located within Kootenai County that is zoned agricultural is allowed as long as it does not violate the 1 residential unit per 5 acre equivalency, unless connected to a municipal system. Long term it is likely agricultural land will be developed and open space plans are expected to be part of each communities Comprehensive Land Use Plan.

- Connectivity of current street patterns should continue and be enhanced through the provision of additional facilities, as development occurs.

- Regional improvements are expected to include opportunities for multimodal transportation choices, such as bicycle and pedestrian facilities and future public transportation.

- Places of historic value that could influence project planning include the potential of historic rail line on the Prairie.

- Public wastewater and water systems are required to serve new commercial, industrial and high-density residential development.

- Development should consider the impacts on the aquifer and the potential for groundwater contamination.

Natural Environment

- The Rathdrum Prairie-Spokane Valley Aquifer is a sole source aquifer for the region and should be protected through careful development on the Prairie.

- New large areas of impervious surface (such as paved parking lots), with resultant stormwater treatment, may impact the water quality of the recharge of the aquifer.

- The unique and natural beauty of the Prairie should be preserved whenever practical through retention of open space, agricultural uses, view corridors, and conservation areas, or easements.

- Continued development and use of septic/ drain field systems may degrade the Rathdrum Prairie / Spokane Valley Aquifer and should continue to be monitored for quality standards.

- Prime agricultural soils should be preserved for agricultural purposes whenever practical and economically feasible.

- Blowing snow and drifting create hazardous conditions that can occur seasonally along the corridor.