

Highway District No. 1 Transportation Plan 2021

*The following consultant
worked on the
development of this plan:*

HMH Engineering
Jim Whitbread, P.E., P.G.



Prepared for:

Highway District No. 1

New Plymouth, Idaho

Prepared by:

HMH ENGINEERING

680 S. Progress Avenue, Suite #2B

Meridian, ID 83642



Table of Contents

Table of Contents	ii
Executive Summary	1
Section 1: Introduction.....	3
Plan Purpose and Goals	3
Introduction to Transportation Master Planning	3
Goals of the Transportation Master Plan	4
Existing System Data	5
Public Participation Goals	6
Section 2: Existing Conditions.....	7
Functional Street Classifications	7
Existing Pavement Widths.....	9
Private Roads	10
Roadway Surface Management Program.....	10
Paved Roadways	10
Gravel Roadways	11
Design Standards.....	11
Bridge Management	11
Section 3: Land Use and Growth Impacts.....	13
Existing Land Use	13
Section 4: Road Network and Traffic.....	13
Base Road Network and System Maps.....	13
Traffic Volumes	13
Level of Service (LOS).....	15
Roadway Segments.....	15
Intersections	16
Major Traffic Generators	17
Section 5: Transportation Improvement Alternatives.....	17
Fiscal Analysis	17
Improvement Identification	19
Developing Project Evaluation Criteria.....	20
Proposed System Improvements	21
Section 6: Project Funding Opportunities.....	21
Surface Transportation Program Rural (STP-R)	22

Federal-aid Bridge	22
Section 7: Adopting the Plan	24
Adoption Process	24

Appendices

Appendix A -	Roadway Network and Functional Classifications
Appendix B -	TAC Survey and Responses
Appendix C -	Public Participation Brochure
Appendix D -	Existing Zoning and Land Use
Appendix E -	Proposed Capital Improvements

List of Tables

Table 1: TAC Members.....	6
Table 2: Total Road Mileage	7
Table 3: District Mileage.....	9
Table 4: Roadway Widths	9
Table 5: PCI Rating.....	10
Table 6: Pavement Condition Guidelines.....	11
Table 7: District Bridges	12
Table 8: District Traffic Data	14
Table 9: Descriptions for Roadway Levels of Service.....	15
Table 10: Level of Service at Intersections	17
Table 11: District Budget	18
Table 12: Project Rating Criteria	20

Executive Summary

Highway District No. 1 (District) has developed a long-range Transportation Plan (Plan). The intent of the plan is to provide a review of existing District assets, estimate current and future land use impacts on the District system, identify deficiencies in the current roadway system and develop strategies for funding existing maintenance practices and construction of system enhancements.

Because transportation issues are a primary focus of most communities it is critical that maintenance efforts and new construction are developed as part of a community-wide effort. Public outreach and communication will ensure that all stakeholders have an active participatory role in the planning process and an appreciation of the practical limitations that economic and regulatory constraints introduce into the process.

Transportation Plan Components

Existing Conditions

The first critical element of the Plan included collection of existing roadway, culvert, bridge, traffic and crash data. By reviewing the data, identification of large traffic generation areas and delineating potential areas of concern the District can more readily address current and future infrastructure needs. Data collected included an inventory of existing roadways, culverts and bridges, current and historical traffic volumes, intersection turning movements and information describing the current condition of the District's infrastructure.

Land Use and Growth Impacts

Assessment of land use encompassed both current and projected future land uses. By studying current land use patterns, areas of traffic generation were identified. In addition, evaluation of development activities and projected land use allowed for forecasting of future traffic volumes by considering these elements.

Transportation Plan Elements

In order to assess District needs the roadway system federal functional classifications (FFC) were identified. Because federal funding is predicated on the roadways FFC, it was critical to identify which roadways were eligible for future grant funded improvements. This Plan component allowed identification of current traffic volumes as well as projections for future traffic volumes. These data were then utilized to identify system deficiencies.

Transportation Improvement Alternatives

Following identification of system elements, future uses, and delineation of deficiencies potential improvement alternatives were identified. All system elements were considered in the evaluation of improvement alternatives. Specifically, attention was directed to intersection and roadway deficiencies as well as mitigation of safety issues. Identification of District priorities in this manner logically led to prioritization of potential projects including their scope and conceptual estimate of construction cost.

Recommendations

A summary of the projects identified in order of the District priority was developed. Projects recommended for inclusion in this priority array were evaluated based on District policy, funding requirements, right-of-way needs, roadway and intersection configuration, functional classification, and overall cost to the District for the improvement.

Fiscal Analysis and Funding Alternatives

As part of the Plan development, a fiscal analysis of the District's budget, existing cost tracking and budget process was included in this analysis. This was integral to development of the capital improvement plan (CIP). When developing the CIP, funding strategies and available grant programs were evaluated.

Public Participation

An essential element of the Plan includes public involvement. This includes a working group created by the District and labeled as the Transportation Advisory Committee (TAC). The TAC consisted of local community members and local agencies. Active participation by the TAC was critical to the planning process.

Section 1: Introduction

Plan Purpose and Goals

The purpose for development of the Plan is to provide a planning tool for the District to manage future growth and program maintenance of the District-wide roadway network. It serves to facilitate identification of current facility and maintenance needs as well as address future anticipated problem areas. In addition, the Plan will address integration of the District system with the cities within the District as well as the state highway system.

Specific goals for the development of the plan will include addressing transportation needs of the District through the year 2040, preparation of a FFC map, coordination with regional transportation planning accomplished by other jurisdictions, development of recommendations to maximize safety and efficiency of the District system and establish development, access management and asset management policies and programs.

Introduction to Transportation Master Planning

The purpose and scope of the Plan varies significantly based on the study area, study participants and stated goals of the study. In the case of this Plan, the study area was determined by the District jurisdictional boundaries. These boundaries established limits for data collection, evaluation of the existing transportation system and future projections for transportation needs.

The type of transportation facilities within the District's jurisdictional boundaries influence the purpose and scope of the Plan. Urban areas may have a multi-modal transportation system and include vehicles, bicycles and pedestrians. Rural areas are often not well suited for multi-modal forms of transportation and are often limited to vehicular traffic. The Plan identifies opportunities for upgrade of existing multi-modal facilities and construction of new facilities when that need has been identified. However, because the majority of the district is of a more rural nature, this Plan will primarily focus on roadway system management and the subsequent development of the Capital Improvement Plan (CIP).

Goals of the Transportation Master Plan

The Plan for the District focuses on the roadway system management and capital improvement of the existing transportation infrastructure as transportation needs within the study area change.

At the beginning of the planning process, the TAC reviewed and discussed the goals of the transportation plan. Those discussions resulted in the goals listed below.

Goals

The District developed this transportation plan to examine the needs through the year 2040 and to lay out a course to improve the transportation system to meet anticipated needs and growth. This plan defines both short- and long-term transportation strategies and investments to improve the District's transportation system and discusses how to finance them.

The District asked for a transportation plan that addressed future growth, was compatible among other local jurisdictions, and addressed the financial capacity to fund needed improvements. They also recognized the need for a balanced transportation system that coordinated with the state and federal highway systems.

Objectives

- Develop a long-range transportation plan that considers transportation needs through the year 2040.
- Establish a Functional Classification Map for the District.
- Maintain consistency with regional planning efforts.
- Maximize safety and efficiency of the existing transportation system.

The first task in determining the appropriate management of and improvements to the existing transportation system is the collection of data pertaining to the transportation network. Data collection for this Plan includes roadway system inventory (road surface type, road surface condition, etc.), traffic volume data and an inventory of traffic generators within the study area.

Acquiring significant public involvement and input is an essential goal of any Transportation Plan. To achieve this, a TAC was set up to represent the community. The TAC is made up of members of the District, local representatives including but not necessarily limited to law enforcement, emergency services, school districts and other agencies as well as private citizens. The TAC is involved throughout the development of the Transportation Plan and provides valuable input concerning the future growth in the area, existing and future transportation needs; as well as identifying priority projects and developing the District's Capital Improvement Plan (CIP).

Another goal of the Plan is review the District's roadway surface management program. Within the study area, roadway surface types are almost exclusively Bituminous Surface Treated (BST) pavement roads, cold mix asphalt roads and hot-mix asphalt roads. With varying traffic volumes and traffic types (passenger vehicles, farm equipment, dairy trucks, etc.), each roadway surface type requires different maintenance methods and effort based on functional classification and traffic loading. It is also appropriate to change roadway surface types as traffic volumes and types change.

The final goal of this transportation plan is to identify the potential funding sources for maintenance and capital improvement projects for the local jurisdictions. It is particularly important to local agencies, because of their limited ability to generate local funding, to understand the available outside funding sources, funding schedules and the special requirements of each funding program. The typical highway funding sources are identified in the Project Funding Opportunities chapter of this Transportation Master Plan.

Existing System Data

The District is located in Payette County. It encompasses the cities of Payette, Fruitland, and New Plymouth. The District maintains 113.5 miles of paved roadway and 0.5 miles of gravel road. Nearly all of the road system is paved or of a Bituminous Surface Treatment (BST) surface. The District is responsible for maintenance and construction of roadways near urban areas adjacent to cities as well as rural areas of the District.

The District roadways that have been developed for sporadic farm-based traffic are experiencing increased loads from heavier machinery and trucks. Local agencies do a credible job of addressing deficiencies however funding isn't typically adequate to address all identified needs. Substandard pavement conditions, narrow roads, limited right-of-way, uncontrolled intersections, and poor intersection geometry result in a system inadequate to meet future needs.

Existing transportation system data collected by local agencies typically includes roadway inventory of surface type and widths, traffic volumes, signs, culverts, bridges, and a pavement condition inventory. These data are then used to evaluate functional classification, roadway standards and maintenance needs.

The District has developed roadway surface type maps based on definitions established by the American Association of State Highway Transportation Officials (AASHTO). The standards established by AASHTO are contained in the Policy on Geometric Design of Highways and Streets and the Geometric Design of Very Low Volume Roads (ADT < 400). Functional classifications include principal and minor arterials, major and minor collectors, and local access roads. These classifications are

described in Section 2 of this Plan. Maps showing the roadway network and functional classifications for District roads are presented in Appendix A.

Public Participation Goals

Facilitating significant public involvement and input is an essential goal of the Plan. To accomplish this a TAC was established to represent the community. The TAC met on December 8, 2020 and June 9, 2021 to discuss issues. The TAC is comprised of members of the District, other local agency personnel, law enforcement, emergency services, school districts. The TAC was involved throughout the Plan development process and provided valuable input concerning future growth in the area, existing and future transportation needs and development of the CIP. Membership of the TAC is shown in Table 1.

Table 1: TAC Members

TAC MEMBERS	
TAC Member	Organization Represented
Dave Levanger	HD No. 1
Kathy Boone	HD No. 1
Ryan Henggeler	HD No. 1
Senator Abby Lee	State Legislator
Mike Halley	New Plymouth School District
Chris Howard	USPS
Rick Funk	Payette County Paramedics
Frank Teunissen	Tenuissen Dairy
Dick Fisher	Fisher Farms
Beau Zimmer	City of New Plymouth
Jerry Campbell	City of Fruitland
Andy Creech	Payette County Sheriff
Adam Gonzalez	Payette County Emergency Management
Rory Clinton	Shoreline
Alan Blevins	New Plymouth Fire
Greg Davis	Davis Dairy
Galen Lee	Citizen

As part of the Plan development, a questionnaire was completed by members of the TAC regarding roadway system deficiencies and issues. The survey and TAC responses are included in Appendix B. In addition, several key issues were identified by the TAC. These included narrow roadway widths, vegetation management,

intersection functionality with regard to trucks, roadway user speed, lack of shoulders and pedestrian pathways, right of way maintenance, interagency coordination on transportation issues, growth impacts on the existing transportation system and safety at connection points between the state highway system and District roadways.

In addition to the TAC, public outreach was integral to the Plan. By engaging the public in open dialogue opportunities to receive input, enhance public awareness of the planning process and inform the public of transportation-related issues facing the District are articulated. Public outreach was accomplished using TAC meetings, interviews with stakeholders and printed informational materials. A brochure was also prepared and posted on the District web site for public review and comment. The brochure is included in Appendix C.

Section 2: Existing Conditions

Functional Street Classifications

Functional street classification is the process by which streets and highways are grouped into classes or systems according to the character of service they are intended to provide.

The existing transportation system information was collected through a series of roadway tours, traffic counts, review of data provided by the district and meetings with District officials and the TAC. The district has developed surface type maps with functional classifications based on AASHTO standards. The guidelines used for classifying the roadways follows the Federal Highway Administration (FHWA) recommendations for percentage of each type of classification. The following table illustrates these guidelines.

Table 2: FHWA Recommendations for Total Road Mileage

PROPORTION OF TOTAL ROAD MILEAGE ASSIGNED TO EACH FUNCTIONAL CLASSIFICATION	
Principal Arterial System	2% - 4%
Principal Arterial Plus Minor Arterial System	6% - 12%
Collector Road System	20% - 25%
Local Road System	65% - 75%

The functional classification system used includes:

- Principal Arterial – designed for traffic movement between major population centers without traffic control delays. Typically, principal arterials include the Interstate system and major highways. They provide high speed travel with minimal interference to through movement. FHWA guidance suggests that principal arterials be appropriately spaced apart and constitute no more than 4% of rural mileage statewide.
- Minor Arterial – designed for relatively uninterrupted traffic movement between cities, towns, and other major traffic generators. Typically, rural minor arterials include state highways and major county or District roads. They serve most of the larger communities not served by the principal arterial system and serve other traffic generators capable of attracting travel over long distances. They form an integrated network, provide interstate and intra-county service, provide trip length and travel density greater than those served by the collector system at relatively high speeds. Minor arterials also minimize interference to through movement and should be limited to 6% to 12% of total mileage when combined with principal arterials.
- Major Collector – designed to serve large towns and traffic generators that are not directly served by an arterial. Typically, major collectors serve as important intra-county travel corridors, provide service to county seats not on an arterial, and larger communities not served by the arterial network.
- Local Access – designed to provide access to the collector system. Typically, all rural roads not classified as arterial, or collector are local access routes.

Local roads with low traffic volumes (typical for most District roads) are often subdivided into sub classes. These functional sub classes are based on the AASHTO Very Low Volume Road standards. They include:

- Major Access – designed to provide access to abutting property as well as access through an area or between higher classified roadways.
- Minor Access – designed to serve primarily as access to abutting property, often with no through route (dead end roads).
- Industrial/Commercial Access – designed to provide access from higher type roadways into an industrial/commercial area frequently used by a large percentage of trucks and other heavy vehicles.
- Agricultural Access – designed to provide access to adjacent farming and ranching operations frequently used by large and slow-moving farm equipment.
- Recreational and Scenic – designed to serve special land use areas including camp sites, boat ramps and other recreational facilities.
- Resource Recovery – designed to facilitate recovery of natural resources including mining and logging operations. These roads typically serve many large vehicles operated by professional drivers.

The following table illustrates the current Functional Classifications for the District roadway system.

Table 3: District Mileage

TOTAL DISTRICT ROAD MILEAGE FUNCTIONAL CLASSIFICATIONS	
Arterial System	0%
Collector System	30%
Local Road System	70%

A map showing the District roadways and Functional Classifications is shown in Appendix A.

Existing Pavement Widths

The existing pavement widths for the District Arterials and Collectors was compiled as part of this Plan. In general, District Arterial and Collector roadways are 21 feet to 24 feet in width while District Local Access roadways are between 16 and 24 feet in width. Pavement widths for arterials and collectors is summarized in the following table.

Table 4: Roadway Widths

ROADWAY WIDTHS – ARTERIALS AND COLLECTORS		
Road Name	Width (ft)	Functional Classification
Black Bridge Road	22	Collector
E 1 st Street	25	Collector
Elmore Road	22	Collector
Holly Avenue	30-40	Collector
N Pennsylvania Avenue	24	Collector
NE 16 th Street	24	Collector
NW 1 st Avenue	15-35	Collector
Sand Hollow Road	24	Collector
SW 2 nd Avenue – E	22	Collector
Washoe Road	24	Collector

*Note - All Roadways listed are two-lane roadways

Private Roads

Private roads are not part of the District network. Private roads within subdivisions or other private property are excluded from District authority.

Private roads are owned, constructed, and maintained by private homeowner groups or landowners who use the private roads. Private roads are used to provide access to residences, commercial and industrial areas. This Plan recommends that new private roads be constructed to District standards and certified by licensed professional engineer. Private roads should not occupy a location needed for a functionally classified road designated on the adopted Functional Street Classification Map.

Roadway Surface Management Program

The District roadways are predominantly asphalt pavement treated with a Bituminous Surface Treatment (BST). The District does maintain a limited gravel road system. Typical roadway surface maintenance operations include pothole patching, overlays, and BST chip sealing. Based on the District's roadway conditions, historic maintenance procedures are adequate to maintain the existing transportation system.

Paved Roadways

The District has adopted an Asset Management program to track the condition of pavements throughout the District. The program utilizes the Asphalt Institutes Pavement Condition Index (PCI). The system can provide recommended treatments and cost estimates of proposed treatments. The PCI is based on Pavement Condition Ratings (PCR). Data for the PCR are acquired by the District to calculate a PCR for a section of roadway. The PCI establishes the overall condition of the roadway and corresponding recommended treatment procedures. The District has established a goal for a minimum average PCI of 70. The current average PCI district wide is 90. The following Table illustrates the PCI as a function of the total District Road network.

Table 5: PCI Rating

PCI RATING RESULTS IN MILES		
PCI	System Miles	Percentage of Total Network
100 - 85	99.7	88%
85 - 65	13.8	12%
65 - 40	0	0
Under 40	0	0

The District will maintain their roadways according to the following table of PCI numbers and recommended maintenance guidelines.

Table 6: Pavement Condition Guidelines

PAVEMENT CONDITION INDEX GUIDELINES	
PCI	Recommendation
100 - 85	No Maintenance Required
85 - 65	Crack Seal, Chip Seal, Normal Maintenance
65 - 40	Surface Overlay, Rehabilitation
Under 40	Full Depth Reconstruction

Gravel Roadways

The District's currently maintains one-half mile (2621 feet) of gravel roadway. The gravel road maintenance program includes grading gravel roads at least 3 times per year, depending on surface condition.

Design Standards

The District has adopted a manual for "Highway Standards and Development Procedures" for the construction of all public roads. In addition, the District utilizes the AASHTO Very Low Volume Road Standards and the AASHTO Policy on Geometric Design of Highways and Streets (2011) for design standards on new construction projects.

Bridge Management

The district has 8 federally classified bridges. A bridge must be 20 feet in span or greater to be classified in the federal classification system. Federally classified bridges are inspected every two years by the Idaho Department of Transportation. The purpose of the inspection is to assign each bridge a bridge sufficiency rating. These are used to compare bridges across the board and determine which bridges are in need of the most attention.

A sufficiency rating below 50 implies that the bridge is in poor condition and needs to be replaced. Sufficiency ratings between 50 and 80 suggest that the bridge is in fair condition, and that rehabilitation, if cost-effective, will bring the bridge up to current

standards. Bridges with sufficiency ratings above 80 are considered to be in good or adequate condition in all areas and are not eligible for federal funding. The current bridges sufficiency ratings have been compiled for the District by ITD and are shown in Table 7.

Table 7: District Bridges

DISTRICT BRIDGES		
Bridge Name	Sufficiency Rating	Load Posted
Langley Gulch – SE 2nd Ave	76.3	N
Langley Gulch – SE 3rd Ave	88.2	N
Payette River – Black Bridge Road	84.4	N
Noble Canal	82.5	N
Farmers Coop Canal – Custer Road	65.0	N
Farmers Coop Canal – Sand Hollow	97.3	N

Section 3: Land Use and Growth Impacts

Existing Land Use

Current land use in Payette County, and within the boundaries of the District, is generally zoned agricultural. Areas of land zoned residential and Industrial/light/heavy industrial occurs sporadically throughout the district. Zones of heavy industrial are located north of NW 1st Avenue east of New Plymouth, southwest of the Intersection of SW 3rd Avenue and US Highway 30 and northeast of the intersection of E 1st Street and N Nevada Avenue. Industrial and light industrial zoning is located north and south of NE 16th Street between N Pennsylvania Avenue and US Highway 30, north and south of NW 2nd Avenue east of US Highway 30, east of Elmore Road between NW 2nd Avenue and NW 1st Street, west of Custer, Butte and Adams Roads between NW 2nd Avenue and NW 1st Avenue, south of SW 2nd Avenue east of US Highway 30, southeast of the intersection between SW 3rd Avenue and US Highway 30.

Payette County has within its boundaries the cities of New Plymouth, Payette, and Fruitland. The population of Payette County in 2019 was 23,951. A map showing Existing Zoning and Land Use in Payette County is located in Appendix D.

Projected Land Use

Payette County is primarily rural agricultural. Although there are planned residential developments within the planning horizon of this Plan, it is not envisioned that the rural agricultural character of the county will change. At this time the projected growth rate for Payette County is 1.82%. Absent significant growth, we do not anticipate significant changes in the land use within the county.

Section 4: Road Network and Traffic

Base Road Network and System Maps

The District roadway system has been identified and is presented in Appendix A.

Traffic Volumes

Traffic volumes at numerous locations within the district. Tube counters were used to collect traffic data. Road tube counters only collect data for counted axles. These

counters tally a single vehicle for every two (2) axles that pass the counter. There is no accounting for vehicles pulling trailers or multi-axle vehicles. The goal of traffic volume data collection is to determine Average Daily Traffic (ADT) volumes. The counters recorded information for a period of seven (7) days.

The TAC discussed some traffic generators that potentially generate higher volumes of traffic. They are discussed in the Major Traffic Generators section of this Plan. Based on their experience in the area, the TAC established a 2% annual growth factor for traffic volumes. The following table shows the current District ADT as well as the 20 years projected volume. A map of the District illustrating ADT is shown in Appendix E.

Table 8: District Traffic Data

DISTRICT TRAFFIC VOLUMES (AADT)				
ROADWAY	INTERSECTION	AADT (current)	AADT (Proj 204040)	Truck Percent of AADT
Sand Hollow	SH 52 (S intersection)	1327		10%
Sand Hollow	SE 2nd Ave (N intersection)	1245		15%
Sand Hollow	SE 2nd Ave (N intersection)	1263		44%
Sand Hollow	SE 3rd Ave (S intersection)	1316		13%
Sand Hollow	SE 3rd Ave (N intersection)	1236		9%
Sand Hollow	SE 4 th Ave (N intersection)	1512		28%
Averaged Projected ADT 1898				
NW 1st	Denver (E intersection)	132		16%
NW 1st	Denver (W intersection)	203		18%
NW 1st	Custer (E intersection)	193		8%
NW 1st	Custer (W intersection)	176		36%
NW 1st	Elmore (W intersection)	241		5%
NW 1st	Whitley (E intersection)	118		5%
NW 1st	Holy (W intersection)	240		15%
Average Projected ADT 276				
SW 1st Ave	Butte (E intersection)	554		7%
SW 1st Ave	Denver (W intersection)	662		12%
SW 1st Ave	Adams (E intersection)	633		22%
SW 1st Ave	Custer (E intersection)	618		29%
SW 1st Ave	Butte (W intersection)	598		28%
SW 1st Ave	Elmore (W intersection)	714		12%
SW 1st Ave	Elmore (E intersection)	700		10%
SW 1st Ave	US 95 (E intersection)	824		6%
Average Projected ADT 996				

Adams	NW 1st Ave (N intersection)	193		6%
Adams	SW 1st Ave (S intersection)	599		36%
Adams	SW 2nd Ave (S intersection)	191		8%
Average Projected ADT 294				
Elmore	SW 1st Ave (N intersection)	459	682	20%
Elmore	SH 30 (N intersection)	699	1039	25%
Elmore	NW 4th Ave (S intersection)	964	1432	12%
Elmore	NW 4th Ave (N intersection)	1193	1773	5%
Washoe	6 th St (S intersection)	1112		4%

Level of Service (LOS)

Roadway Segments

"Level of Service" (LOS) is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six LOS are defined for each type of facility that has analysis procedures available. Letters designate each level, from A to F with LOS of A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions and the driver's perception of those conditions. Safety is not included in the measures that establish service levels."

Source: 2016 Highway Capacity Manual

Assumptions: Most of the roadways within the study area have limited sight distance, and therefore, for calculating the LOS for roadway segments, it was assumed a worst-case scenario of 100% of the roadway segment does not have adequate passing sight distance. It was also assumed that speeds are typically 45-55 mph with rolling terrain and 18% trucks and recreational vehicles. A Class II Highway is assumed for the analysis. The following table lists the basic LOS guidelines.

Table 9: Descriptions for Roadway Levels of Service

*Level of Service	*Description	*% Time Spent Following	Typical Traffic Volume (vph) Rolling Terrain	Typical Traffic Volume (vph) Level Terrain
A	Free Flow. Speeds are controlled by the driver's abilities	<40%	< 115	<165
B	Relatively Free Flowing Traffic. Drivers can expect some delays,	40-55%	<250	<360

	passing becomes more common			
C	Stable Traffic Flow. Drivers are delayed up to 70% of the time. Platoon driving is more common. Turning traffic adds to congestion and slows the traffic	55-70%	<680	<760
D	Approaching Unstable Flow. Passing is very difficult as passing demand is high and available passing ability is very limited.	70-85%	<1430	<1430
E	Unstable Flow. Passing becomes almost impossible, many driver interruptions and driver frustration significantly increases.	85-100%	< 2080	<2230
F	Forced or heavily congested flow. Volume of traffic exceeds the capacity. Start & stop traffic, with highly variable speeds.	100%	> 2080	>2230
*Source: 2016 Highway Capacity Manual				

The ADT data are used to evaluate system capacity and level of service (LOS). The capacity of a system is defined by the Highway Capacity Manual as the “maximum hourly rate at which persons or vehicles can reasonably be expected to traverse a point or uniform sector of road during a given time under prevailing traffic, roadway and control conditions”. The District is currently operating at an above satisfactory level of capacity due to relatively low traffic volumes and limited congestion. Most District roadways are currently operating under a LOS A.

Intersections

As with roadway segments, intersection traffic flow can also be measured by LOS. The LOS is indicated by the predicted amount delay, or stopped time, at two-way or all-way stop controlled intersections and signalized intersections. At the present time there are no signal controlled intersections within the study area. However, listed in the table below are data showing signalized intersection information; this information is left in the table for future reference.

The following table shows the LOS guidelines for intersections:

Table 10: Level of Service at Intersections

Level of Service	Stop Controlled Intersection Average Vehicle Delay (sec)	Signal Controlled Intersection Average Vehicle Delay (sec)
A	<10	<10
B	10 – 15	10 – 20
C	15 – 25	20 – 35
D	25 – 35	35 – 55
E	35 – 50	55 – 80
F	> 50	> 80

Analyses of stop-controlled intersections within the study area indicate a Delay/LOS value of A. The future Projected Levels of Service (2040) of intersections remain at the Level A value.

Major Traffic Generators

One important part of the Plan is to identify major traffic generators in the District. Traffic generators are the origin and destination locations for the traveling public. Examples of traffic generators include residential subdivisions, retail shopping centers, commercial employers, farms and ranches, recreational destinations, schools, and towns. Major traffic generators identified in this study include rural residential development, schools, agricultural business, interstate agricultural business and incorporated cities within the District.

Section 5: Transportation Improvement Alternatives

Fiscal Analysis

An analysis of the current District budget was performed. The 2020 and 2021 District budgets were utilized in this analysis as illustrated in Table 11 below.

Table 11: District Budget

REVENUE		
Account	Budget 2020	Budget 2021
Carry Over	\$400,000.00	\$140,000.00
County Taxes	\$809,923.00	\$860,747.00
Motor Users	\$730,000.00	\$657,000.00
Penalty & Interest	\$4,700.00	\$4,700.00
Ag Eq Replacement	\$10,086.00	\$10,086.00
Sales Tax	\$40,000.00	\$37,000.00
Interest	\$4,200.00	\$9,000.00
Personal Property	\$7,868.00	\$7,868.00
Other	-	-
Grant Money	-	\$50,000.00
Sale of Capital Assets	-	-
Total	\$2,006,777.00	\$1,776,401.00

EXPENDITURES		
Account	Budget 2020	Budget 2021
Bridge & Culvert	\$35,000.00	\$35,000.00
Labor	\$462,690.00	\$465,593.00
Road Materials	\$818,888.00	\$552,933.00
Weed & Pest Control	\$50,000.00	\$49,795.00
Comm. Salary	\$7,000.00	\$7,000.00
Gravel	\$75,000.00	\$75,000.00
Comm. Mileage	\$750.00	\$750.00
Equipment Maint.	\$90,000.00	\$90,000.00
Office & Election	\$9,000.00	\$9,000.00
Gravel Plant Maint.	\$400.00	\$400.00
Snow Removal	\$15,000.00	\$20,000.00
Traffic Services	\$20,000.00	\$20,000.00
Gasoline & Oil	\$37,000.00	\$37,000.00
Safety & Drug Testing	\$2,500.00	\$2,500.00
Shop Maint.	\$15,000.00	\$15,000.00
Dues & Convention	\$10,500.00	\$4,000.00
Insurance	\$38,900.00	\$38,700.00
Schools & Seminars	\$3,500.00	\$2,500.00
Legal & Accounting	\$7,000.00	\$7,000.00
FICA	\$35,747.00	\$35,969.00

Employee Life Insurance	-	\$1,800.00
Employee Retirement	\$54,217.00	\$55,215.00
Employee Health Ins	\$90,771.00	\$103,470.00
Capital Outlay	\$65,000.00	\$65,000.00
Technology	\$2,500.00	\$5,500.00
City of Fruitland	\$60,414.00	\$77,276.00
Total	\$2,006,777.00	\$1,776,401.00

As shown, District revenue is heavily dependent upon County Taxes and Motor Users. A much smaller revenue stream is generated from other miscellaneous smaller sources. As a result, the District budget is very sensitive to changes in these two main revenue streams. It is also worthy of note that District cash reserves dropped significantly between 2020 and 2021. Cash reserves are accumulated when revenue exceeds expenditures and reduced when expenditures exceed incoming revenue. It is worthy of note however that this is typical of local road jurisdictions. Cash reserves are often used to match state and federal grants of accomplish local projects which have no grant revenue source.

With regard to expenditures, the two biggest expenditures were for Labor & Benefits and materials. This is also typical for local road jurisdictions. It is not uncommon for Labor & Benefits, Equipment and Materials to equal 33% of the budget respectively. Labor & Benefits and Materials for the District 2021 budget total 37% and 35%, respectively of the total budgeted expenditures. As stated, this is well within typical values for these two expenditure categories. Equipment capital outlay and maintenance expenditures total about 10% for 2021. The remaining expenditures are for miscellaneous road maintenance and administration.

Based on our review of the district budget, district expenditures are well within the accepted norms for current practice. Clearly the District fiscal position is heavily dependent upon two main revenue sources. Significant reductions to these revenue streams would adversely affect District operations. Also, because revenue marginally funds district operations it is very difficult for the District to accomplish locally funded improvements or even match existing available grant programs. In our opinion, a revenue increase is necessary and critical to make any system improvements or administer state and federal grants.

Improvement Identification

The purpose of the Project Rating Criteria is to establish project priorities and the desired improvements. Identification of proposed improvements will guide use of funds, identify alternative funding sources, preparation of conceptual cost estimates and construction. This rating criteria was utilized to develop the table of proposed improvements illustrated in Section 4.

Developing Project Evaluation Criteria

As illustrated in the preceding fiscal analysis, improvements to the transportation system require careful evaluation of criteria for these improvements. In order to facilitate this, the District and TAC used the current system needs identified in Section 4 to develop a District-wide transportation project priority list. During this process, a Project Priority List was developed. Projects identified as requiring outside funding were considered for this analysis.

To assist the District and TAC in evaluating and ultimately prioritizing projects a project rating system was developed. The rating system utilizes six criteria to rate projects. The rating criteria are ranked in order of importance. For example, “safety” is the number one project rating criteria while road classification is the number six rating criteria. The following table illustrates the rating criteria, weighting factors and scoring description for projects identified in Section 4.

Table 12: Project Rating Criteria

PROJECT RATING CRITERIA		
Criteria	Criteria Weighting Factor	Scoring Description
Safety	4	1-10 for minimal safety concerns (1 crash in the past 3 years and/or 1 safety deficiency or less) and 10 for extreme safety concerns (over 5 crashes in the last 3 years and/or 5 safety deficiencies or more)
Surface Condition	3	1-10, 4 for poor surface condition (PCI under 40) 6 for fair surface condition (PCI 40-65) and 8 for good surface condition (PCI over 65)
Anticipated Costs	3	1-10, 2 for extremely large projects (over \$1 million), 3 for large projects (\$700,000 to \$1 million), 6 for moderately large projects (\$400,000 to \$700,000), 7 for moderately small projects (\$200,000 to \$400,000), 8 for small projects (\$100,000 to \$200,000), and 10 for very small projects under \$100,000
Surface Type	2	1-10, 4 for BST surfaces, 6 for cold mix surfaces and 10 for hot mix surfaces
Traffic Volume	2	1-10, 3 for extremely low traffic volumes (less than 100 ADT), 7 for low traffic volumes (100 to 500 ADT), 9 for high traffic volumes (1000 to 1500 ADT), and 10 for extremely high traffic volumes (ADT over 1500)
Road Classification	1	1-10, 1-recreational/scenic, 2-resource recovery, 3-minor access, 4-agricultural, 5-industrial, 6-major access, 7-minor collector, 8-major collector, 9-minor arterial, 10-principal arterial

Using the above project rating criteria, the District prepared a Project Priority list as described below.

Identification of Transportation Deficiencies and Capital Improvement Plan (CIP)

The TAC identified many transportation concerns of the local community. These concerns are broken into “general transportation concerns”, “safety concerns” and “roadway system maintenance concerns”. From the transportation concerns identified by the community and deficiencies identified through the planning process for potential projects in the next 20 years, the TAC developed a list of projects for inclusion in the District’s Capital Improvement Plan (CIP). The CIP is a planning tool that assists the jurisdictions in budgeting for projects.

The TAC prioritized projects and identified potential funding sources allowing the local highway jurisdictions to prepare funding applications and proactively complete the project on this priority list.

Proposed System Improvements

Based on input received from the District and TAC, a preliminary project list was developed. This list of projects is considered dynamic and projects will be added based on future conditions and needs of the District. A list of Proposed Capital Improvements is included in Appendix F.

Section 6: Project Funding Opportunities

Many sources of project funding are available to local highway jurisdictions. These funding opportunities vary by type of project, and percent of local funding match. Typical funding sources for projects include:

- Surface Transportation Program (STP) Local Rural
- STP Safety
- Forest Highways (FLAP)
- Local Strategic Initiatives (LHSIP)
- Federal-aid Bridge
- Transportation Alternatives
- Child Pedestrian Safety

A brief description of each funding program is included below. The information provided is a summary of the Local Funding information provided on the Local Highway Technical Assistance Council (LHTAC) internet web site.

Source: <http://www.lhtac.org/>

Surface Transportation Program Rural (STP-R)

STP-R funding, in the State of Idaho, comes from two distinct programs; the first is the Incentive program which is the Federal Aid portion of the program where approximately \$5.5 million is available, on a competitive basis, annually to Counties, Highway Districts and Cities with a population under 5000. The second is the investment program which is the Non-Federal Aid portion of the program where approximately \$2.2 million is available, on a competitive basis, annually to Counties, Highway Districts and Cities with a population under 5000. These funding sources are further described below:

Local Rural Highway Investment Program (LHRIP)

The Local Rural Highway Investment Program (LHRIP) replaces the old “exchange” program in which a local Highway jurisdiction could “exchange” its Federal Aid account for \$0.60 for each Federal Aid dollar and use the resulting revenue as part of its annual budget. In replacing the “exchange” program, the program continues the \$0.60 per Federal Aid dollar but discontinued the individual jurisdiction accounts and made the funding available, on a competitive basis, to Counties, Highway Districts and Cities with a population under 5000.

Three funding categories of projects in the investment program include:

1. Construction Projects, with a funding limit of \$100,000.
2. Transportation Planning Projects, with a funding limit of \$50,000.
3. Signing Projects, with a funding limit of \$25,000.

LHRIP projects are implemented through a formal application and review process administered by LHTAC. The LHTAC application process occurs annually between September and November. LHTAC ranks the project applications and typically makes the funding available in February the following fiscal year (i.e. November 2007 applications are for funding in February 2009).

Funding from the LHRIP program can also be used as part of the matching funds on other federal aid project (i.e. Incentive, Bridge, Enhancement, CMAQ, etc.).

LHRIP funding is primarily used for smaller projects that cannot justify the expense of completing the Federal Aid process and for matching funds on federal projects. This funding also lends itself to joint projects.

Federal-aid Bridge

Bridge funding is allocated to the replacement or rehabilitation of bridges (structures with a span of at least 20 feet) with low “sufficiency ratings”. Typically structures with sufficiency ratings below 75 are eligible rehabilitation projects. Structures with a

sufficiency rating of 50 and under are eligible for a bridge replacement project. Structures with a sufficiency rating less than 35 are considered “critical bridges” and move to the front of the bridge program. The ITD Board allocates 35 percent of the available Bridge funding to structures on the local road systems. The Bridge funding program requires a 20 percent funding match by the local jurisdiction. LHTAC recommends Local Bridge Projects to the ITD Board for inclusion in the STIP.

Transportation Alternatives Program

The purpose of the Transportation Alternatives Program (TAP), formerly known as Community Choices for Idaho, is to provide for a variety of alternative transportation projects to address the needs of non-motorized users while maximizing the use of federal funds. The program will provide a mechanism to solicit locally identified projects and leverage potential federal funding opportunities for sponsored projects.

The Idaho Transportation Department (ITD) administers this program including the solicitation and awarding of projects.

Local Highway Safety Improvement Program (LHSIP)

Local Highway Safety Improvement Program (LHSIP) funding is intended to implement projects to reduce accidents and improve the safety of the traveling public, including pedestrians and bicyclists. This funding is available on any qualifying state or local road. Typical LHSIP projects on the public roadway system include guardrail construction, clear zone enhancement and traffic calming (speed or traffic volume reducing features). Safety projects on bike and pedestrian paths and public trails are also eligible under the LHSIP Safety funding. A portion of the LHSIP funding is allocated to the improvement of at grade railroad crossings. The LHSIP funding requires a 7.34 percent funding match by the local jurisdiction.

All LHSIP projects are identified through a review process that includes a systematic evaluation of high accident locations produced from a statewide accident records system. The projects are compared based on a cost to benefit ratio that is developed using accident history and project cost data. The Idaho Transportation Department Board makes the final LHSIP project selection.

Child Pedestrian Safety Program

House Bill 334 (H334), passed in 2017 allows some of the Strategic Initiatives money to be spent on projects addressing “children pedestrian safety on the state and local system.” LHTAC and ITD staff worked together to develop a joint program to fund these projects. The Children Pedestrian Safety Program projects include but are not limited to; paths/sidewalks along or adjacent to an existing roadway, connecting sidewalks/paths between two terminal points, ADA ramps, pedestrian crossing facilities across an existing roadway including signing and/or signalization and paving an existing pathway. Currently, the Child Pedestrian Safety Program is not funded.

Section 7: Adopting the Plan

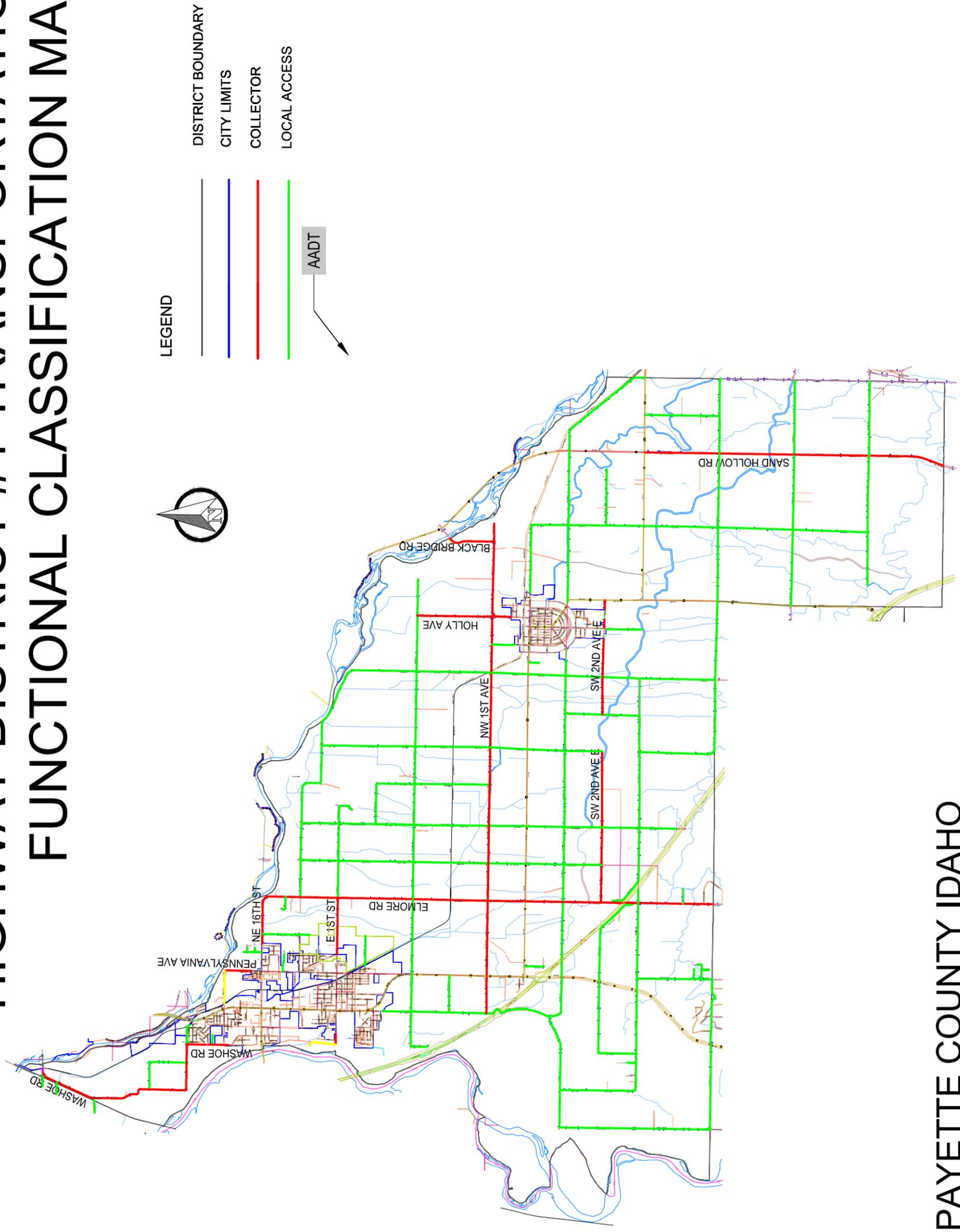
Adoption Process

The Transportation Plan must be adopted by the District Commissioners.

- The adoption process would start with the HD No. 1 Technical Advisory Committee (TAC) endorsing the plan and directing that it be sent to the District Commissioners for formal adoption.
- The Transportation Master Plan will then be submitted to the Local Highway Technical Assistance Council (LHTAC).

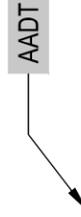
Appendix A - Roadway Network and Functional Classifications

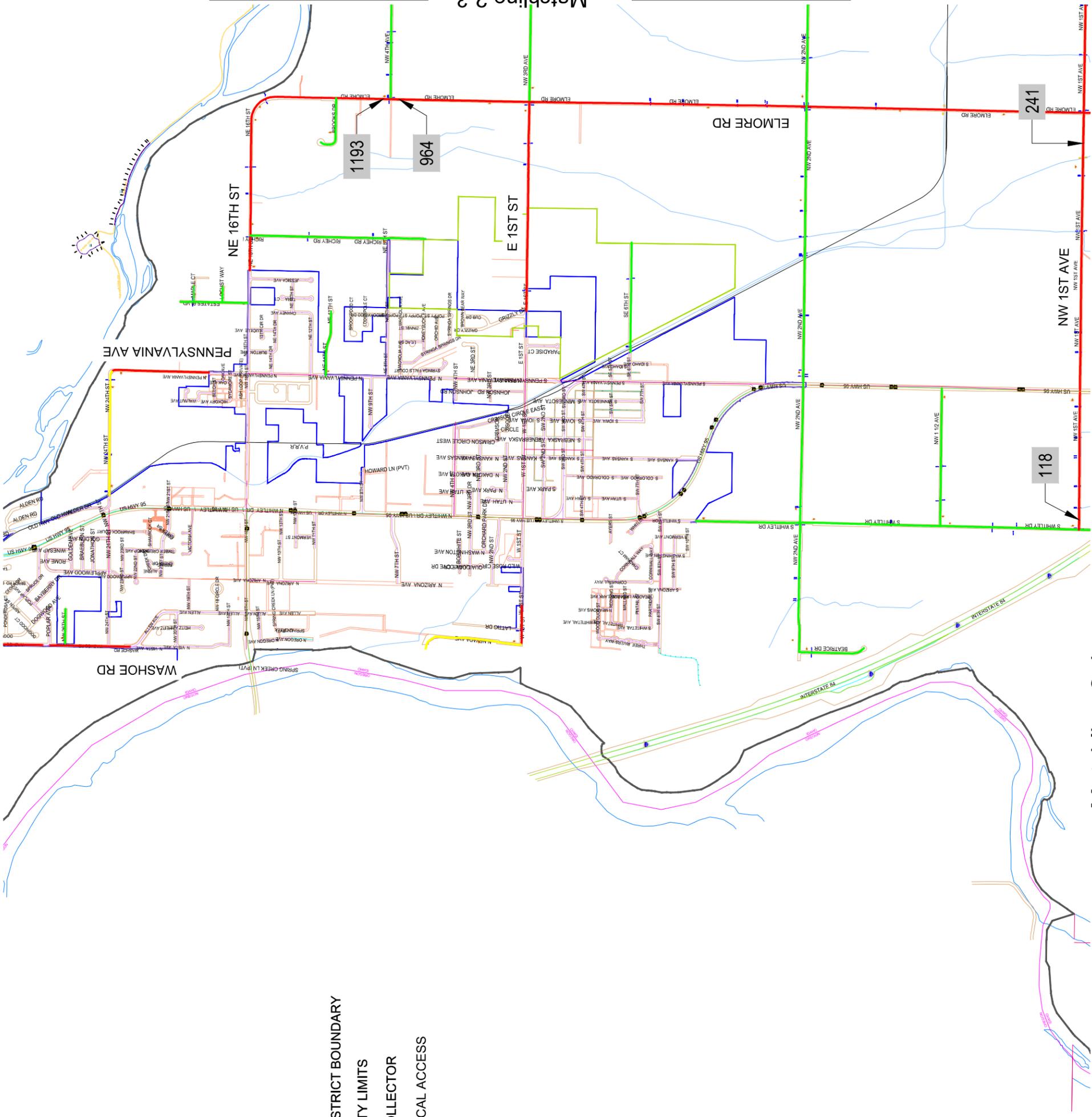
HIGHWAY DISTRICT #1 TRANSPORTATION PLAN FUNCTIONAL CLASSIFICATION MAP





LEGEND

-  DISTRICT BOUNDARY
-  CITY LIMITS
-  COLLECTOR
-  LOCAL ACCESS
-  AADT



Matchline 1-2

Matchline 2-4

Matchline 2-3

#	DATE	DESCRIPTION

HMH
 engineering
 680 S. Progress Way
 Suite 2B
 Meridian, ID 83642
 (208) 635-5825

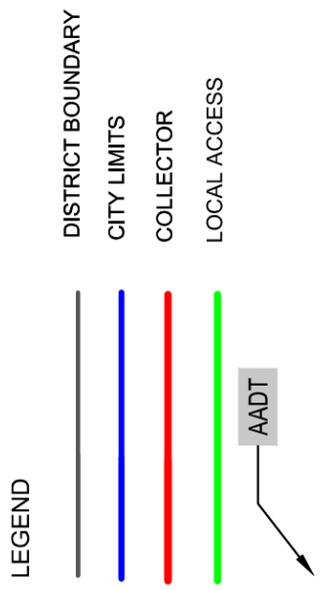
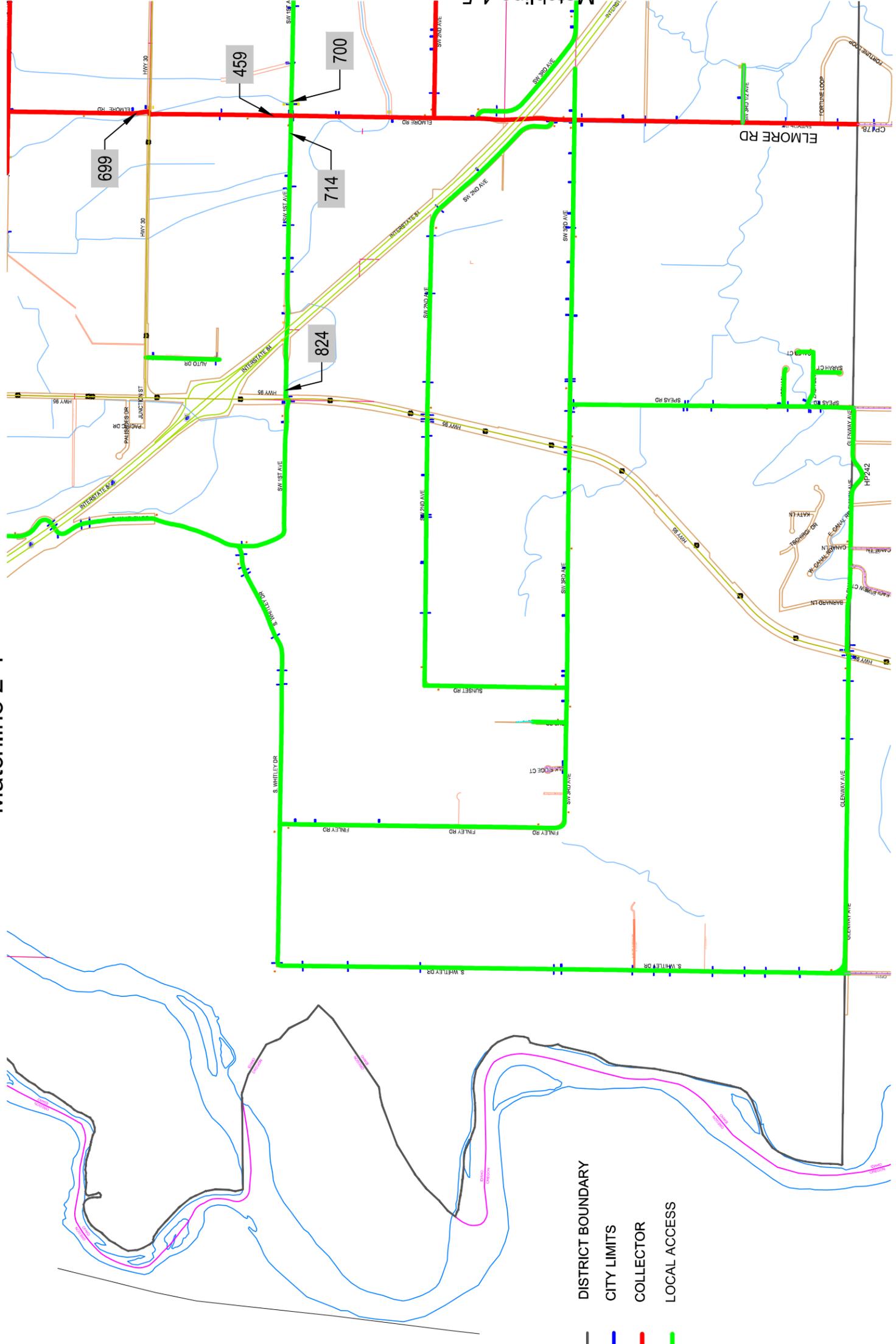
**HIGHWAY DISTRICT 1
 TRAFFIC
 PAYETTE
 COUNTY,
 IDAHO**

PROJECT NO: GS-020-HID#1
 DRAWN BY:
 CHECKED BY:
 SCALE: (1"=17')

**TRANSPORTATION
 PLAN**

C-2

Matchline 2-4

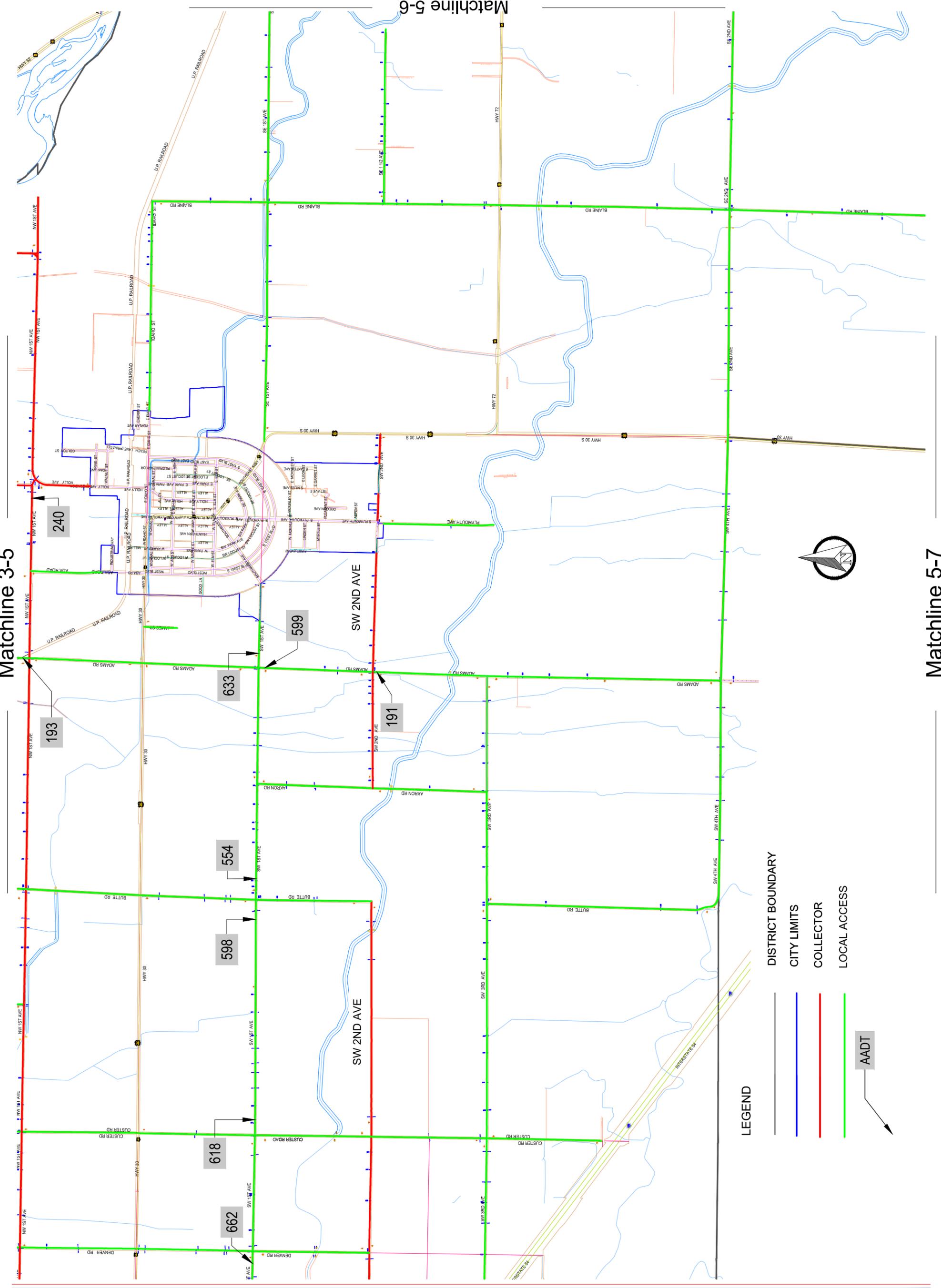


 <p>680 S. Progress Way Suite 2B Meridian, ID 83642 (208) 635-5825</p>		<p>HIGHWAY DISTRICT 1 TRAFFIC PAYETTE COUNTY, IDAHO</p>		<p>PROJECT NO: GS-2020-HD#1 DRAWN BY: CHECKED BY: SCALE: (1"=1/4")</p>	<p>TRANSPORTATION PLAN</p>	<p>C-4</p>
#	DATE	DESCRIPTION				
REVISIONS:						

Matchline 4-5

Matchline 5-7

Matchline 3-5



LEGEND

- DISTRICT BOUNDARY
- CITY LIMITS
- COLLECTOR
- LOCAL ACCESS
- AADT

#	DATE	DESCRIPTION

REVISIONS:

HMMH engineering
 Suite 2B
 680 S. Progress Way
 Meridian, ID 83642
 (208) 635-5825

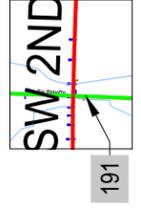
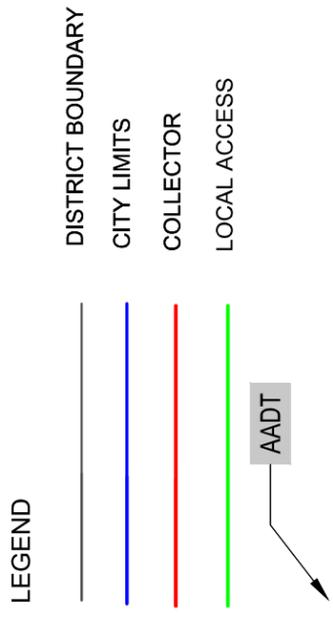
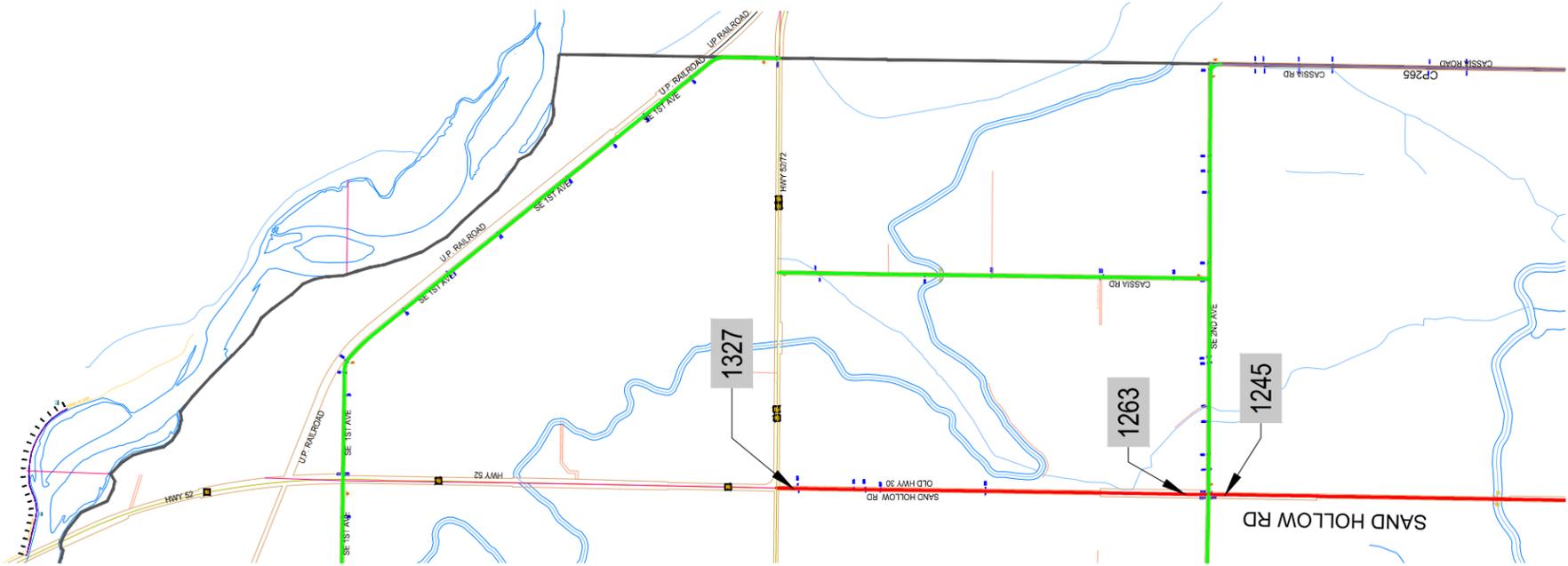
**HIGHWAY DISTRICT 1
 TRAFFIC
 PAYETTE
 COUNTY,
 IDAHO**

PROJECT NO: GS-020-HID#1
 DRAWN BY:
 CHECKED BY:
 SCALE: (1"=17')

**TRANSPORTATION
 PLAN**

C-5

Matchline 5-6



#	DATE	DESCRIPTION

REVISIONS:

680 S. Progress Way
Suite 2B
Meridian, ID 83642
(208) 635-5825

**HIGHWAY DISTRICT 1
TRAFFIC
PAYETTE
COUNTY,
IDAHO**

PROJECT NO: GS-020-HID#1
DRAWN BY:
CHECKED BY:
SCALE: (11"X17")

**TRANSPORTATION
PLAN**

C-6

Matchline 6-8

Appendix B - TAC Survey and Responses

SURVEY QUESTION RESULTS	
Questions:	Responses:
<p>1.) How important is the local HD No. 1 transportation system to you personally?</p> <p>Please answer on a scale of 1 to 10 with 1 being not important and 10 being very important.</p>	<p>10</p> <p>10</p> <p>10</p> <p>10</p> <p>10</p>
<p>2.) How important is the local HD No. 1 transportation system to your business or agency?</p> <p>Please answer on a scale of 1 to 10 with 1 being important and 10 being very important.</p>	<p>10</p> <p>10</p> <p>10</p> <p>10</p> <p>10</p>
<p>3.) How would you rate the condition of the local HD No. 1 transportation system?</p> <p>Please answer on a scale of 1 to 10 with 1 being important and 10 being very important.</p>	<p>5</p> <p>7</p> <p>10</p> <p>8</p> <p>6</p>
<p>4.) Are there roads in HD No. 1 that need improvement?</p> <p>Please answer Yes or No. Please answer on a scale of 1 to 10 with 1 being important and 10 being very important.</p>	<p>Yes</p> <p>Yes</p> <p>No</p> <p>Yes</p> <p>Yes</p>
<p>5.) Are there intersections within HD No. 1 that need improvement?</p> <p>Please answer Yes or No. Please answer on a scale of 1 to 10 with 1 being important and 10 being very important.</p>	<p>No</p> <p>No</p> <p>No</p> <p>Yes</p> <p>Yes</p>
<p>6.) What is your preferred method of intersection control in order of preference? Stop Signs,</p>	<p>None, Yield, Stop, Lights, Roundabout</p> <p>None, Stop, Lights, Roundabout, Yield</p>

Roundabout, Traffic Lights, Yield Signs, No Control.	None, Stop, Lights, Roundabout, Yield Lights, Stop, Roundabout, Yield, None
<p>7.) Do the existing stop-controlled intersection in HD No. 1 function adequately?</p> <p>Please answer Yes or No. If your answer is No, please indicate which intersections do not function adequately.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<p>8.) Do you utilize roads within HD No. 1 for bicycle travel or walking?</p> <p>Yes or No. If your answer is Yes, which roads do you use?</p>	<p>Yes</p> <p>Yes: E. 1st</p> <p>Yes: ADA, NW 1st, Holly, Idaho, Blaine, SE 1st, SW 1st, SW 2nd, Adams</p> <p>Yes: Adams, SW 3rd, Butte, SW 4th</p> <p>No</p>
<p>9.) Is the roadway network in HD No. 1 adequate for truck traffic?</p> <p>Yes or No. If your answer is No, which roads are inadequate for truck traffic?</p>	<p>No</p> <p>No: SW 1st, Holly</p> <p>Yes</p>
<p>10.) Is access to schools and other public facilities adequate in HD No. 1?</p> <p>Yes or No. If your answer is No, which school or public facility and associated access roads are inadequate for access to schools and other public facilities?</p>	<p>No: SW 2nd</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>

Appendix C - Public Participation Brochure

Highway District No. 1

New Plymouth, Idaho

Welcome to the Highway District No. 1 Transportation Plan Virtual Public Meeting



Project Sponsor: Highway District No. 1
Project Funded By: Local Highway Technical Assistance Council (LHTAC)

December 8th, 2020



PROJECT BACKGROUND

Traffic volumes have increased district wide due in large part to growth and development as well as agribusiness activities. Accordingly, Highway District No. 1 applied for and received grant funding to prepare a Transportation Plan.

DESIGN DETAILS

In general, the Transportation Plan serves to identify existing system assets and characteristics, plan for future system needs and engage the public in development of the Plan. Specifically, the plan will accomplish several tasks including:



- Collection of all relevant road and bridge data
- Analysis of current land use and potential growth impacts
- Identification of roadway network federal functional classifications, roadway characteristics such as width, traffic volumes, current pavement condition
- Identification of significant safety issues
- Projections of future traffic volumes
- Development of a priority matrix for evaluation of future system improvement needs, identification of the prioritized projects, conceptual estimates of construction costs, current District financial capabilities to make improvements and analysis of grant funding opportunities
- Review of current maintenance practices
- Public involvement and requests for comment on the Plan

NOVEMBER 2020

Data Collection &
Establish Base
Road Network 11/01/2020

First Technical
Advisory Committee
Meeting 11/10/2020

DECEMBER 2020

Evaluation of Land
Use 12/01/2020

Existing & Future
Condition 12/31/2020

PROJECT TIMELINE

MAY 2021

Develop Transportation
Improvement
Alternatives 05/30/2021

JUNE 2021

Public
Involvement
Plan 06/30/2021

JULY 2021

Develop Plan Recommendations,
Funding Options, Road
Management/Maintenance
Guidelines 07/30/2021

SEPTEMBER 2021

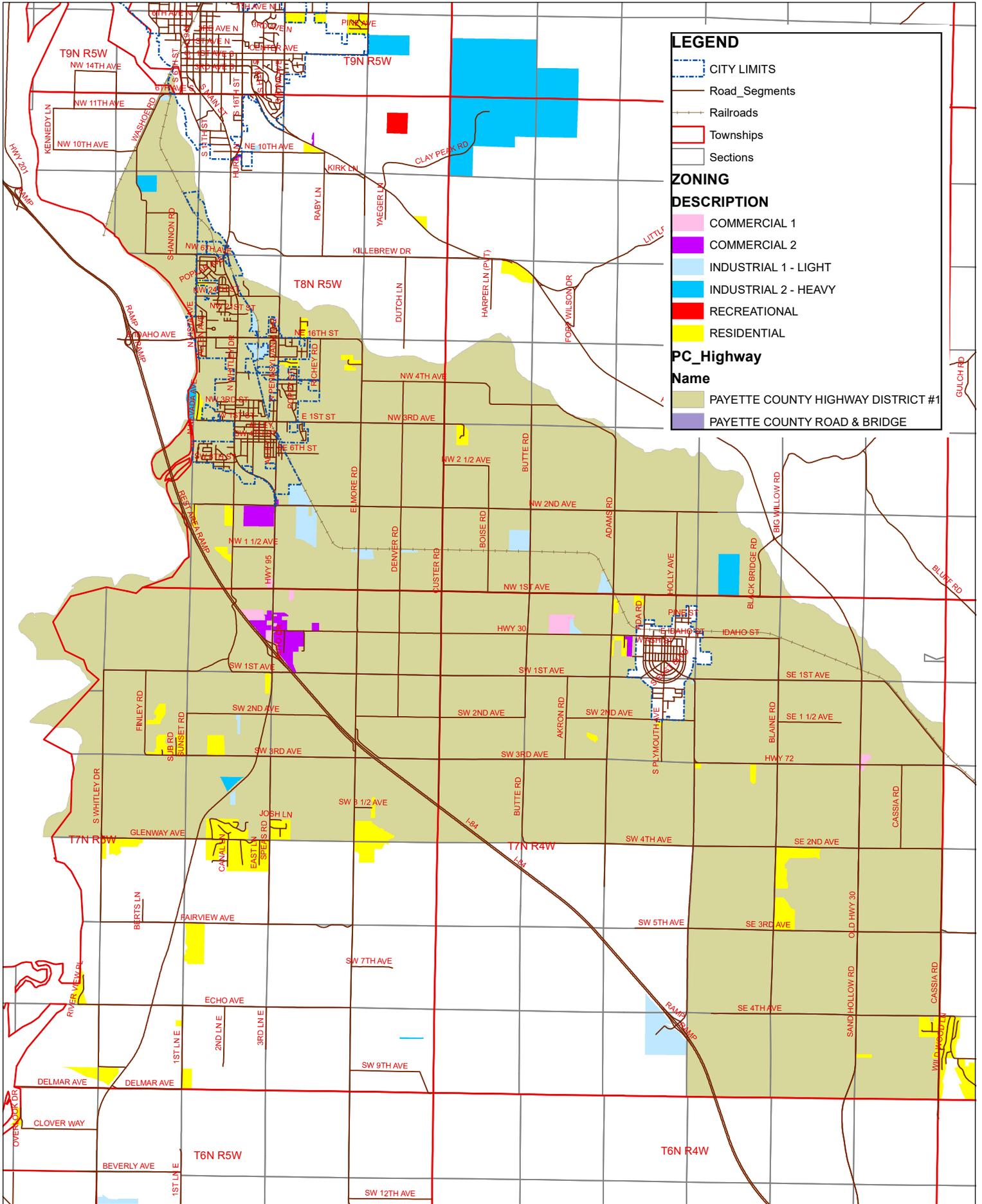
Publish Final Report 09/30/2021

Note: Technical Advisory Committee and General Public meetings will be scheduled during development of the plan.

Appendix D - Existing Zoning & Land Use

HIGHWAY DISTRICT #1 WITH ZONING DATA

Date: 10/20/2020



3,400 1,700 0 3,400 Feet



This map was prepared by the Payette County GIS Dept for Assessment purposes only and is not to be considered as a guarantee of the location or dimensions of the parcels represented. Payette County is not responsible for any possible inaccuracies.

Appendix E - Proposed Capital Improvements

PROPOSED CAPITAL IMPROVEMENTS		
Project Name	Project Location	Proposed Improvements
SW 1st Avenue	Adams Road to Custer Road	Rehabilitate Existing Pavement, Safety Upgrades
SE 2nd Avenue	Highway 30 to Sand Hollow Road	Rehabilitate Existing Pavement, Overlay & Safety Upgrades
Custer Road	NW 3 rd Ave. to NW 4 th Ave.	Rehabilitate Existing Pavement, Safety Upgrades