Appendix A. Recommended Code Language

The language below is recommended as new code language to be added into the Development Code or to replace the relevant current code language.

11-1A-1 Definitions

Canal Pathway

A 10-foot-wide pathway physically separated from the roadway that follows a canal or other type of waterway through the City of Meridian. Designed for use by pedestrians, bicyclists, skaters, wheelchair users, joggers, and other nonmotorized users.

Residential Pathway

A 10-foot-wide pathway that parallels the roadway and is separated from the roadway by a 6-8-foot-wide planting buffer. Designed for use by pedestrians, bicyclists, skaters, wheelchair users, joggers, and other nonmotorized users.

Rail-with-Trail Pathway

A 10-14-foot-wide pathway physically separated from any street or highway that is located within the existing Union Pacific rail corridor right-of-way from Nampa to Boise.

Micro Pathway (Accessway)

A narrow, paved pathway that provides access to important destinations such as schools or provides access through a residential development to connect with the existing pathway system.

Unpaved or Soft Surface Path

A 3-8-foot-wide path with a surface consisting of gravel, crushed limestone, dirt, or other semi-pervious material. Developed dirt and gravel pathways are used primarily by pedestrians but may also serve bicyclists. They provide access in natural areas or open space. They are found in the same types of facilities as hiking paths.

Sidewalk

A paved walkway along the side of a street separated from the street by a raised curb. Sidewalks are generally 4-8 feet wide and cross multiple driveways and intersections. A planting strip may separate the sidewalk from the roadway. Sidewalks intend to serve pedestrians and wheelchair users. Sidewalks are under the jurisdiction of the Ada County Highway District (ACHD).

Bicycle Lane

A portion of the roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. Bicycle lanes are generally found on major arterial and collector roadways and are 4"6 feet wide. Bike lanes are under the jurisdiction of ACHD.

11-3A-6 Ditches, Laterals, Canals, or Drainage Courses

E. Easements from developers shall be required along all drainages, laterals, canals, or drainage courses that are consistent with the adopted Pathways Master Plan.

11-3A-8 Multiuse and Micro Pathways

A. Add "and the adopted Pathways Master Plan" after the statement "consistent with the Comprehensive Plan."

B. Add the following at the beginning: "The pathways design shall be consistent with the Design Guidelines as shown in the City's adopted Pathways Master Plan."

APPENDIX B. PATHWAY SURFACING OPTIONS

When approaching a specific pathway project, pathway designers and Park District representatives may assume the pathway will be surfaced with asphalt or perhaps concrete if budget allows. These are some of the most common and acceptable materials used on pathways. However, this may not be what local residents had in mind when the pathway idea was initially conceived. Or, local residents may not have considered the pathway surface until a specific surface was proposed, and then suddenly everyone has an opinion. These conflicts often lead designers into exploring possible pathway surfacing options (of which there are more every year), including:

- traditional asphalt and concrete
- permeable asphalt and concrete
- commercial soil stabilizers
- geotextile confinement systems
- chip seal
- crusher fines
- rubberized surfaces
- organic surfaces
- agricultural by-products
- wood
- rubberized surfaces
- limestone treated surfaces

To arrive at a recommended pathway surface, several key criteria should be considered, including:

- **Initial Capital Cost** " Pathway surface costs vary dramatically and dollars to build pathways are scarce. Construction costs include excavation, sub-base preparation, aggregate base placement, and application of the selected pathway surface. Costs can vary from a low of around $2.00/SF for a bark mulch pathway, up to $12-$13/SF for a rubberized surface.
- **Maintenance and Long Term Durability** " The anticipated life of a pathway surface can vary from a single year (bark surface in a moist climate) to 25+ years (concrete). In addition, each pathway surface has varying maintenance needs that will require regular to sporadic inspections and follow up depending on the material selected. Some surface repairs can be made with volunteer effort such as on a bark surface pathway, while other such as a concrete surface will require skilled craftsmen to perform the repair.
- **Existing Soil and Environmental Conditions** " Soil conditions are a given and play a critical role in surfacing selection. In addition, when considering the use of a permeable concrete or asphalt surface, the success rate of these surfaces is directly correlated to the permeability of the soil and climatic conditions. The lower the permeability and moisture, the greater risk of failure.
- **Availability of Materials** " A great pathway surface in one area of the country may prove cost-prohibitive in another area due to availability of materials. Limestone-treated pathway surfaces are common in the eastern US, but unheard of in the west due to a lack of limestone. There are also some environmentally sound ideas such as the use of recycled glass in asphalt (called

"Glassphalt"), but because this is not done on a large scale, finding a source for the glass aggregate may prove difficult.

- **Anticipate Use/Functionality** " Who are the anticipated users of the pathway? Will the pathway surface need to accommodate equestrians, wheelchairs, maintenance vehicles, bicycles, etc.? Multiple use pathways attempt to meet the needs of all anticipated pathway users. However, this may not be feasible with a single pathway surface. Consider the shoulder area as a usable surface, making it wide enough for use by those preferring a softer material. Each surface also has varying degrees of roughness and therefore accommodates varying users. In-line skates, for example, cannot be used on a chip seal surface or most permeable concrete surfaces due to the coarseness of the finished surface.
- **Funding Source** " The funding source for the pathway may dictate the pathway surface characteristics. If the pathway has federal funds and is being administered through the state department of transportation, a funding agency will need to review and approve the selected pathway surface.
- **Susceptibility to Vandalism** " Pathway surfaces are not usually thought of as being susceptible to vandalism, but the characteristics of the varying surfaces do lend themselves to a variety of vandalism including movement of materials such as gravel or bark, graffiti on hard surfaces, arson (wood and rubber surfaces), and deformation.
- **Aesthetics** " Each pathway surface has varying aesthetic characteristics that should fit with the overall design concept desired for the project.

The pathway surfacing matrix on the following pages provides greater detail regarding potential pathway surfacing options.

Pathway Surfacing Matrix, Multi-Use Hard Surface Pathway

Product	Description/ Installation Method	Durability	Maintenance Description	Permeable	Functionality	ADA	MTIP Fundable	Availability	Vandalism Susceptible	Cost Per SF	2'-12'-2' Section Cost
					B=Bicycle **P=Pedestrian** **S=Roller blade** **W=Wheelchair**			**H=High** **M=Moderate** **L=Low**	**G=Graffiti** **C=Cutting** **A=Arson** **M=Moved** **D = Deformation**		
Nike Grind " Atlas Tracks (Familiar Product)	Prepare sub-base, place geotextile, 6" aggregate base, apply Nike grind atlas track rubberized surface over base.	8-10 years	Reapply binding agent every 5-6 years. Keep surface clean, dirt and sand wear surface down, Full replacement needed after 10 years	Yes	Pedestrian only. Avoid heavy loads including equestrians, bicyclists, and vehicles	Yes	No	L " locally based but few installers	C, A, G	$12.50	$3,198,000
Nike Grind " Field Turf	Prepare sub-base, place geotextile, 6" aggregate base, apply field turf surface over base, similar to laying a carpet.	8-10 years	Sweep regularly; keep free of organic materials as they will rot the surface. Replace surface after 10 years	Yes	Pedestrians only, too soft for bikes and wheels	No	No	L	C, A, G	$11.75	$3,006,120
Nike Grind " Rebound Ace	Prepare sub-base, place geotextile, 6" aggregate base, pour concrete or asphalt base, apply rebound Ace surface directly over hard surface.	8-12 years	Replace topcoat after 10 years	No	B, P, W, S, but not tested, intended application is sport surfaces	Yes	Yes	L	C, A, G	$10.50	$2,686,320
Permeable Concrete	Prepared sub-base, place geotextile, 12" depth aggregate	15 years	Vacuum sweep and pressure wash 4 times a year	Yes	B, P, W	Yes	Yes	M	G	$6.00	$1,535,040

Product	Description/ Installation Method	Durability	Maintenance Description	Permeable	Functionality	ADA	MTIP Fundable	Availability	Vandalism Susceptible	Cost Per SF	2'-12'-2' Section Cost
					B=Bicycle **P=Pedestrian** **S=Roller blade** **W=Wheelchair**			**H=High** **M=Moderate** **L=Low**	**G=Graffiti** **C=Cutting** **A=Arson** **M=Moved** **D = Deformation**		
	base, Portland cement, coarse aggregate, water, 5" depth section										
Concrete	Prepared sub-base, place geotextile, 6" agg. base, Portland cement, aggregate, sand, water 4" depth section	25 years	Periodic inspection for uplift and settlement, repair as needed	No	B, P, S, W	Yes	Yes	H	G	$4.75	$1,215,240
Permeable Asphalt	Prepared sub-base, place geotextile, 12" depth aggregate base, emulsion and coarse aggregate 2" depth section	8 years	Vacuum sweep and pressure wash 4 times a year, patch any pot holes as needed	Yes	B, P, S, W	Yes	Yes	M	G	$3.50	$895,440
Glassphalt	Prepared sub-base, place geotextile, 6" agg. base, asphalt with aggregate/glass, 2" depth section	7-10 years	Pothole patching	No	B, P, S, W	Yes	Yes	M	G	$2.75	$703,560

Product	Description/ Installation Method	Durability	Maintenance Description	Permeable	Functionality	ADA	MTIP Fundable	Availability	Vandalism Susceptible	Cost Per SF	2'-12'-2' Section Cost
					B=Bicycle **P=Pedestrian** **S=Roller blade** **W=Wheelchair**			**H=High** **M=Moderate** **L=Low**	**G=Graffiti** **C=Cutting** **A=Arson** **M=Moved** **D = Deformation**		
Reground Asphalt	Prepared sub-base, place geotextile 6" aggregate base, emulsion recycled asphalt chips 2" depth section	7-10 years	Pothole patching	No	B, P, S, W	Yes	Yes	M	G	$2.75	$703,560
Asphalt*	Prepared sub-base, place geotextile, 6" aggregate base, emulsion, aggregate	10 years	Pothole patching	No	B, P, S, W	Yes	Yes	H	G	$2.75	$703,560*
Poly Pave	Prepared sub-base, place geotextile, 6" aggregate base, grade and shape, mix poly pave in top 2" of base, spray on two top coats of poly pave 2" depth section	5-10 years	Reapply Poly pave solidifier every 1-2 years depending on level of use. Make spot repairs as needed.	No	B, P, W, S	Yes	Unknown	L	G	$2.50	$639,600
Chip Seal	Prepared sub-base, place geotextile, 6" aggregate base, emulsion, ½" " ¼" aggregate, two coat process	7-10 years	Pothole patching	No	B, P, W	Yes	Yes	M	G	$2.00	$511,680

APPENDIX C. SAFE ROUTES TO SCHOOL

Bicycle and pedestrian programs enhance the biking and walking experience in ways other than the provision of on- or off-road pathways and bikeways. Support programs include educational programs, the provision of bicycle parking, and various city programs and policies. The Manual on Uniform Traffic Control Devices (MUTCD) provides support and guidance regarding the need for standards in establishing safe routes to schools. The process outlined in the MUTCD should be consulted in the development of any Safe Routes to School program.

Safe Routes to School (SR2S) refers to a variety of multi-disciplinary programs aimed at promoting walking and bicycling to school, and improving traffic safety around school areas through education, incentives, increased law enforcement, and engineering measures. Safe Routes to School programs typically involve partnerships among municipalities, school districts, community and parent volunteers, and law enforcement agencies.

The City has a vested interest in encouraging schoolchildren to lead active lifestyles. Safe Routes to School programs offer ancillary benefits to neighborhoods by helping to slow traffic and provide reasonable facilities for walking by all age groups.

Why Do We Need SR2S?

The purpose of a SR2S program is to identify and improve school commute routes, to increase the number of students who walk and/or bicycle to school in Meridian, to lessen traffic congestion, and to improve health. Although most children walked or biked to school pre-1980, the number of children walking or bicycling to school has sharply declined since, due to urban growth patterns and safety/security issues that have made it less safe to do so. Higher obesity rates are being reported and linked to many of these lifestyle changes. Walking and biking to school are healthy alternatives to being driven and can provide a sense of independence for children who may otherwise be restricted by school bus or parents' schedules.

What Are the Benefits of a SR2S Program?

The primary benefit of implementing a SR2S program is the resulting increase in safety for children walking and riding bicycles to school. A comprehensive strategy based on a cooperative effort between school officials, parents, residents and city planning and engineering staff will ensure that specific school-related traffic calming projects and pedestrian and bicycle improvements will become priority projects eligible for state, federal, or other grant

funding. The involvement of various stakeholders throughout the Safe Routes process increases the likelihood for implementation of needed safety improvements. While the primary focus of a SR2S program is improving safety for children walking and biking to school, these safety benefits often extend to all age and activity groups.

In addition to safety enhancements, a SR2S program helps integrate physical activity into the everyday routine of schoolchildren. Health concerns related to sedentary lifestyles have become the focus of efforts both statewide and nationally to reduce health risks associated with being overweight. Identifying and improving routes for children to safely walk and bicycle to school is one of the most cost-effective means of reducing weekday morning traffic congestion and can help reduce auto-related pollution.

Local Coordination and Involvement

In order to be successful, a SR2S program in Meridian will need buy-in from individuals and organizations throughout the community. While each individual school will have unique concerns and goals for developing a SR2S program, an organizational strategy that promotes the sharing of ideas between schools can be more effective than several isolated school groups. The key components of an effective SR2S program include champions (individuals at each school who spearhead their school's organizing effort), stakeholders (a team of people from an individual school), and a task force made up of all the stakeholder teams in the community.

The basic components of the proposed SR2S program include:

Education

Students are taught safety skills, and educational campaigns aimed at drivers are developed. Safe Routes to School maps help provide guidance for the best bicycling and walking routes.

Curriculum programs implemented in schools can teach children the basics regarding pedestrian and bicycle safety. Classroom educational materials should be presented in a variety of formats (safety videos, printed materials, and classroom activities), and should continually be updated to make use of the most recent educational tools available. Classroom education programs should also be expanded to promote the health and environmental benefits of bicycling and walking. Outside schools, educational materials should be developed for different audiences, including elected officials (describing the benefits of and need for a SR2S program), and parents (proper school drop-off procedures and safety for their children).

Educational programs should be linked with events and incentive programs when appropriate, and students should be included in task force activities, such as mapping locations for improvements. Involving students can serve as an educational tool and can provide the task force with meaningful data

that is useful for prioritizing improvement locations. Educational programs, and especially on-bike training, should be expanded to more schools and for more hours per year.

Encouragement

School commute events and frequent commuter contests are used to encourage participation.

Programs that may be implemented include a "Walking School Bus Program," which involves parents taking turns walking (or bicycling) with groups of children to school. A good opportunity to kick-off a SR2S program is during International Walk to School Day, held annually in early October. Organized Bike and Walk to School Days should be held monthly or weekly to keep the momentum going and encourage more children and their parents to walk or bike to school. Prizes or drawings for prizes offered to participants have been used in some schools as an incentive. Events related to bicycling and walking should be incorporated into existing curricula when practical. Involving local celebrities or publishing the names of student participants in events can be effective means of encouraging student involvement. Another key to successful events is promotion. Ensuring that parents are aware of events, whether classroom-specific or district-wide, is key to gaining maximum student participation.

Other contests and event ideas to encourage bicycling and walking to school include: competitions in which classrooms compete for the highest proportion of students walking or biking to school, themed or seasonal events, and keeping classroom logs of the number of miles biked and walked by children and plotting these distances on a map of Idaho or the US. A wealth of information and ideas for promoting SR2S programs can be found at:
www.nhtsa.dot.gov/people/injury/pedbimot/ped/saferouteshtml/index.html.

Enforcement

Various techniques are employed to ensure traffic laws are obeyed. The Meridian Police Department patrols school zones and conducts crosswalk enforcement regularly. The SR2S task force and stakeholder teams should develop priority areas in need of enforcement. One option to avoid the cost of providing physical police presence is to use innovative signage, such as in-roadway crosswalk signs or in-roadway warning lights, to alert motorists that children may be crossing, or speed feedback signs that indicate to motorists their current speed. Neighborhood speed watch programs, in which community members borrow a radar device and use it to record the license plate numbers of speeding vehicles, can also be effective.

Engineering

To provide safe access for children, school sites should have designated pedestrian access points that do not require students to cross in front of drop-off and pick-up traffic. Locations identified through the SR2S process should be considered for SR2S grant funding.

Streetscaping improvements should ensure adequate sight distance on all access routes, crossings, and intersections. School zone designations for speed limits should be an element of a comprehensive circulation plan that also includes school-based student as well as Police Department crossing guard programs and identification of safe routes for bicycling and walking to school.

Suggested Route to School Maps

The 2003 MUTCD, Chapter 7. Section 7A.01 notes: "A school route plan for each school serving elementary to high school students should be prepared in order to develop uniformity in the use of school area traffic controls, and to serve as the basis for a school traffic control plan for each school. The school route plan, developed in a systematic manner by the school, law enforcement, and traffic officials responsible for school pedestrian safety, should consist of a map showing streets, the school, existing traffic controls, established school walk routes, and established school crossings."

An inventory should be taken of the traffic controls, signage, crosswalks, and other physical conditions on streets surrounding the school. Factors for determining the "best" routes to a school along the street grid included the presence of traffic controls, crosswalks, or crossing guards at key crossing locations, and presence of sidewalks or bike lanes along street segments. In some cases, roadside paths or known off-street cut-throughs (such as a path leading to the back of a school) can be noted as suggested routes. The suggested routes extend a distance of about one-half mile for elementary schools, and about one mile for junior high and high schools.

Suggested Route Maps are intended to reflect a partnership between City and school officials. Each map should be reviewed and signed by both the School Principal and a City Engineer to ensure that they accurately reflect both the physical roadway conditions around the school and the walking patterns of students. It is recommended that the maps be reviewed and updated regularly to reflect changes in the roadway network, such as new traffic control or crosswalk locations. It is recommended that the maps be reviewed by the school officials at the beginning of each school year in order to confirm that the Suggested Routes shown are still the best ways for children to walk and bicycle to the school. Additional review and practice runs by parents are a key component to the successful use of the maps.

The City can assist in developing and distributing suggested route to school maps to local schools as part of the Master Plan and future SR2S efforts, subject to school approval and City resource availability.

Funding

While much of the initial work involved in starting a SR2S program can be conducted by stakeholder team volunteers, eventually funding will be needed to plan and implement physical improvements, hold events, and develop and implement educational programs and materials.

Capital Funding

Capital funding for infrastructure improvements is available from a variety of sources. The SR2S task force should work with City staff agencies to identify all potential funding sources and to provide support on funding requests. Meridian may be able to pursue federal funds recently made available with the new Safe Routes to School Program established in the Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU). This section of the bill provides $612 million in funding over the next five years with no state receiving less than $1 million per fiscal year. Other portions of SAFETEA-LU, such as the Transportation Enhancements (TE) and the Congestion Mitigation and Air Quality (CMAQ) funds may also provide funding opportunities for bicycle and pedestrian projects.

APPENDIX D. ESTIMATED LONG-TERM COSTS

Pathway Name and Segments	Distance	Pathway miles Construction (10' paved)	Signing	Crossings				Preliminary Cost	Design & CM (25%)	Contingency (30%)	Estimate of Total Cost
				Type 1	Type 1+	Type 2**	Type 3				
		$300,000	$1,500	$5,000	$15,000	$10,000	$100,000				
	miles	per mile *	per mile	per crossing	per crossing	per crossing	per crossing				
Eight Mile Pathway Segment A	0.55	$165,000	$825		$15,000			$180,825	$45,206	$54,248	$280,279
Eight Mile Pathway Segment F	0.33	$99,000	$495					$99,495	$24,874	$29,849	$154,217
Five Mile Creek Pathway Segment E	1.06	$318,000	$1,590					$319,590	$79,898	$95,877	$495,365
Five Mile Creek Pathway Segment F	0.34	$102,000	$510		$15,000			$117,510	$29,378	$35,253	$182,141
Ten Mile Creek Pathway Segment B	0.71	$213,000	$1,065		$15,000			$229,065	$57,266	$68,720	$355,051
Meridian Loop Segment P	1.96	$588,000	$2,940					$590,940	$147,735	$177,282	$915,957
Five Mile Creek Pathway Segment H	1.42	$426,000	$2,130		$15,000			$443,130	$110,783	$132,939	$686,852
Five Mile Creek Pathway Segment I	1.42	$426,000	$2,130					$428,130	$107,033	$128,439	$663,602
Eight Mile Pathway Segment B	1.02	$306,000	$1,530	$5,000				$312,530	$78,133	$93,759	$484,422
Eight Mile Pathway Segment E	0.13	$39,000	$195		$15,000			$54,195	$13,549	$16,259	$84,002
South Slough Pathway Segment A	1.03	$309,000	$1,545		$15,000			$325,545	$81,386	$97,664	$504,595
South Slough Pathway Segment B	1.12	$336,000	$1,680		$15,000			$352,680	$88,170	$105,804	$546,654
Settlers Creek Pathway Segment B	0.37	$111,000	$555		$15,000			$126,555	$31,639	$37,967	$196,160
Ten Mile Creek Pathway Segment D	1.4	$420,000	$2,100		$15,000			$437,100	$109,275	$131,130	$677,505

Pathway Name and Segments	Distance	Pathway miles Construction (10' paved)	Signing	Crossings				Preliminary Cost	Design & CM (25%)	Contingency (30%)	Estimate of Total Cost
				Type 1	Type 1+	Type 2**	Type 3				
		$300,000	$1,500	$5,000	$15,000	$10,000	$100,000				
	miles	per mile *	per mile	per crossing	per crossing	per crossing	per crossing				
Meridian Loop Segment Q	1.64	$492,000	$2,460		$15,000			$509,460	$127,365	$152,838	$789,663
Nine Mile Creek Pathway	3.04	$912,000	$4,560		$75,000			$991,560	$247,890	$297,468	$1,536,918
Eight Mile Pathway Segment C	0.23	$10,000,000	$345					$10,000,345	$2,500,086	$3,000,104	$15,500,535
Eight Mile Pathway Segment D	0.95	$285,000	$1,425		$15,000			$301,425	$75,356	$90,428	$467,209
Five Mile Creek Pathway Segment G (long term)	0.57	$171,000	$855		$15,000			$186,855	$46,714	$56,057	$289,625
Bear Creek Connection Segment A	0.5	$150,000	$750					$150,750	$37,688	$45,225	$233,663
Bear Creek Connection Segment B	0.63	$189,000	$945		$15,000			$204,945	$51,236	$61,484	$317,665
Ten Mile Creek Pathway Segment A	1.02	$306,000	$1,530		$30,000			$337,530	$84,383	$101,259	$523,172
Ten Mile Creek Pathway Segment E	0.77	$231,000	$1,155		$30,000			$262,155	$65,539	$78,647	$406,340
Total											**$26,291,588**

Appendix E. Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ACHD	Ada County Highway District
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
CMAQ	Congestion Mitigation and Air Quality
COMPASS	Community Planning Association of Southwest Idaho
FHWA	Federal Highway Administration
GPS	Global Positioning System
HOA	Homeowners Association
ISTEA	Inter-modal Surface Transportation Enhancement Act
ITD	Idaho Transportation Department
MUTCD	Manual on Uniform Traffic Control Devices
NMID	Nampa Meridian Irrigation District
PBTP	Pedestrian-Bicycle Transition Plan
ROW	Right-of-way
RUS	Recreational Use Statutes
RWT	Rail-with-Trail
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SDC	System Development Charge
SR2S	Safe Routes to School
TAC	Technical Advisory Committee
TCD	Traffic Control Devices
TE	Transportation Enhancement
UP	Union Pacific (Railroad)