



# South Meridian Transportation Plan Final Report



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September 14, 2009





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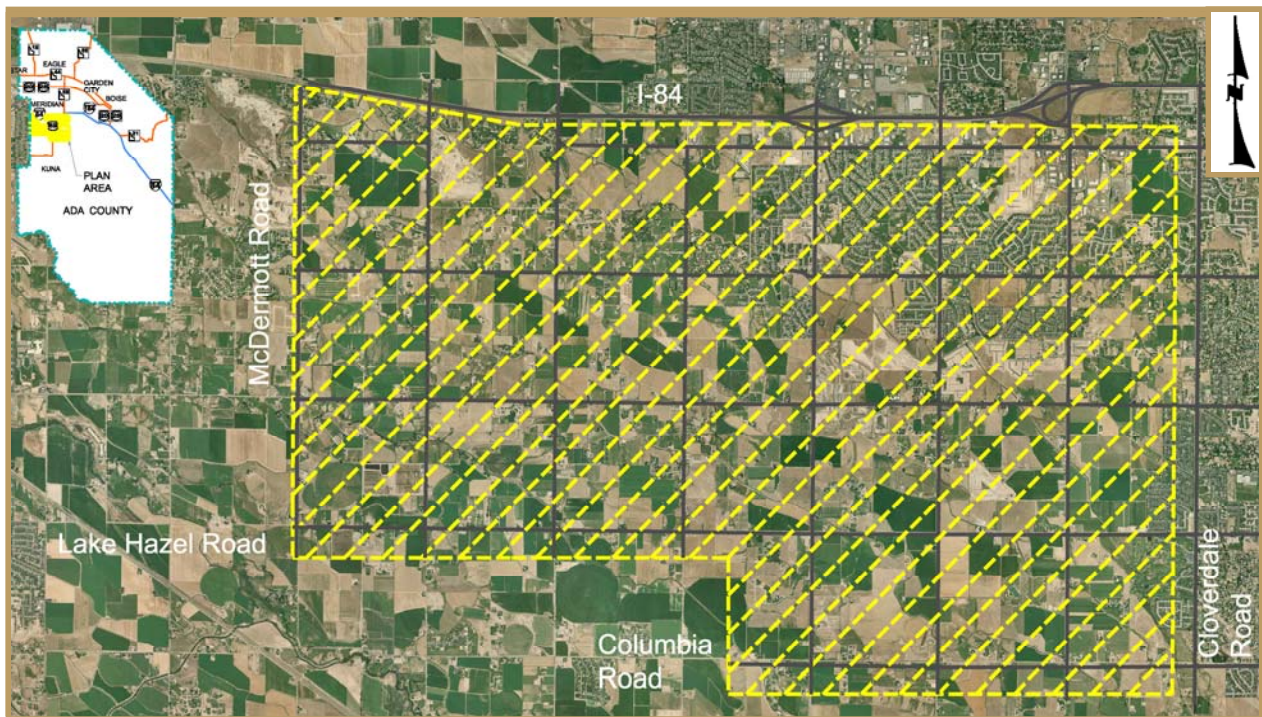
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## Executive Summary

### South Meridian Transportation Plan Objectives

The South Meridian Transportation Plan was commissioned by the Ada County Highway District (ACHD) to identify future roadway, intersection, and corridor needs as travel demand in the area increases. It will serve as a guide for improving the transportation system as development occurs. The South Meridian Area is defined as the area bounded by Interstate 84 (I-84) to the north, Lake Hazel Road and ½ mile south of Columbia Road to the south, McDermott Road to the west, and ¼ mile west of Cloverdale Road to the east. A map of the South Meridian Transportation Plan Area and vicinity is presented in **ES Figure 1**. Full size copies of all figures are included in **Appendix A**.



**Figure 1. South Meridian Transportation Plan Area**

Primary objectives of the Plan include:

- Identification of planning level roadway and intersection improvements based on the forecasted travel demand from a specific City of Meridian land use plan
- Development an Access Management Plan for the South Meridian Area
- Identification of guidance for future pedestrian and bicycle improvements in South Meridian
- Investigation of a potential Overland Road connection west of Ten Mile Road
- Preparation of estimated planning level right-of-way and construction needs and costs

- Comparison of identified needs and estimated costs with those in ACHD's *Capital Improvements Plan* (CIP)

This Plan will serve as the transportation policy for the South Meridian Area. As it is implemented all roadway and intersection improvements, roadway cross sections, access points, and pedestrian facilities should be designed and constructed following the standards and guidelines included in the Plan. Following adoption of the South Meridian Transportation Plan by ACHD, appropriate sections will be incorporated into the City of Meridian Comprehensive Plan. These steps by ACHD and the City of Meridian will ensure cooperative interaction between land use planning and the transportation system as this area develops and is built-out. Policy could be affected by the following:

- Where there are differences between the CIP and this Plan, whichever requires the greater right-of-way will be followed
- *Transportation and Land Use Integration Plan* (TLIP) street typologies, as included, are still in draft form and subject to change until adopted by the ACHD Commission and the City of Meridian
- Inclusion of amended growth from Kuna, based on their new Comprehensive Plan, will need to be reviewed at the appropriate time as these demographics have not been fully included into the projections
- A proposed Neighborhood Center at the Lake Hazel Road / Locust Grove Road intersection may require an alternative intersection treatment to preserve a safe and pedestrian friendly environment and meet the City's land use goals
- The Plan addresses time frames for improvements but is not a schedule for improvements and will need to be specifically reviewed as the *Five Year Work Plan* (FYWP) and CIP updates are completed
- Changes in the Plan may be required since recommendations are based on the 2030 *Communities in Motion* (CIM) and the adopted City of Meridian Comprehensive Plan

## Agencies Involved in the Plan

Coordination between transportation and land use planning agencies in the South Meridian Area was critical to the development of the Plan. Several agencies served on a project team used to provide input and make collaborative decisions. Agencies participating on this team included:

- ACHD
- City of Meridian
- Community Planning Association of Southwest Idaho (COMPASS)

Other agencies were involved in specific meetings or separate interviews as input was obtained throughout the Plan. These included:

- City of Kuna

- Meridian Joint School District No. 2
- ACHD Commuteride
- Idaho Transportation Department (ITD)

## Findings and Recommendations

Based on the technical analysis, several findings and recommendations have been developed. These include:

1. Significant improvements to the arterial roadways and intersections are required to accommodate forecast travel demand as modeled using the City of Meridian's specific land use plan
2. Conceptual roadway and intersection configuration improvements have been identified for the arterial roadways in the Plan area
3. Preservation of right-of-way for 5-lane sections is recommended for portions of several arterials, such as Victory Road, Amity Road, McDermott Road, Linder Road, and Black Cat Road
4. Preservation of right-of-way for a 7-lane section is recommended for Overland Road from Meridian Road (State Highway 69) to Cole Road
5. The majority of arterial intersections in the Plan area are anticipated to operate at an acceptable level of service (LOS) D or E (the standards in ACHD's adopted CIP) with 2030 forecast travel demand if they are improved based on Plan recommendations
6. A robust and functional collector network is recommended for the area along with guidelines for implementation
7. An Access Management Plan has been developed along with guidelines for implementation in the area
8. A Pedestrian and Bicycle Travel Plan has been prepared for the South Meridian Area
9. A corridor preservation map has been created for future development review and approvals based on recommended 2030 configurations
10. The potential for an Overland Road Connection from Ten Mile Road to McDermott Road is feasible. Additional analysis is needed and there is an opportunity to coordinate this with the City of Nampa's transportation planning efforts for Airport Road
11. The South Meridian Transportation Plan recommendations should be included in the next update of the FYWP and CIP as applicable and appropriate

## Implementation of the Transportation Plan

ACHD's roles in implementing the recommendations of this Plan include using it to:

- Supplement future FYWP and CIP updates
- Guide right-of-way preservation during development review
- Provide guidance for desired street sections in South Meridian
- Control access along roadways

- Guide pedestrian and bicycle improvement along roadways and off-street pathway connections

ACHD's roles in implementing the Access Management Plan include:

- Closing, consolidating, and/or relocating access points as appropriate
- Requiring and reviewing traffic impact study information related to project phasing, driveway volumes, and operations of proposed access points
- Recommending cross access locations to the City of Meridian
- Determining temporary access locations with the City of Meridian
- Holding financial surety to ensure the closure of all temporary access points
- Attending joint pre-application meetings with the City of Meridian on large or complicated projects in the area or as needed

The City of Meridian's roles in implementing the South Meridian Transportation Plan include:

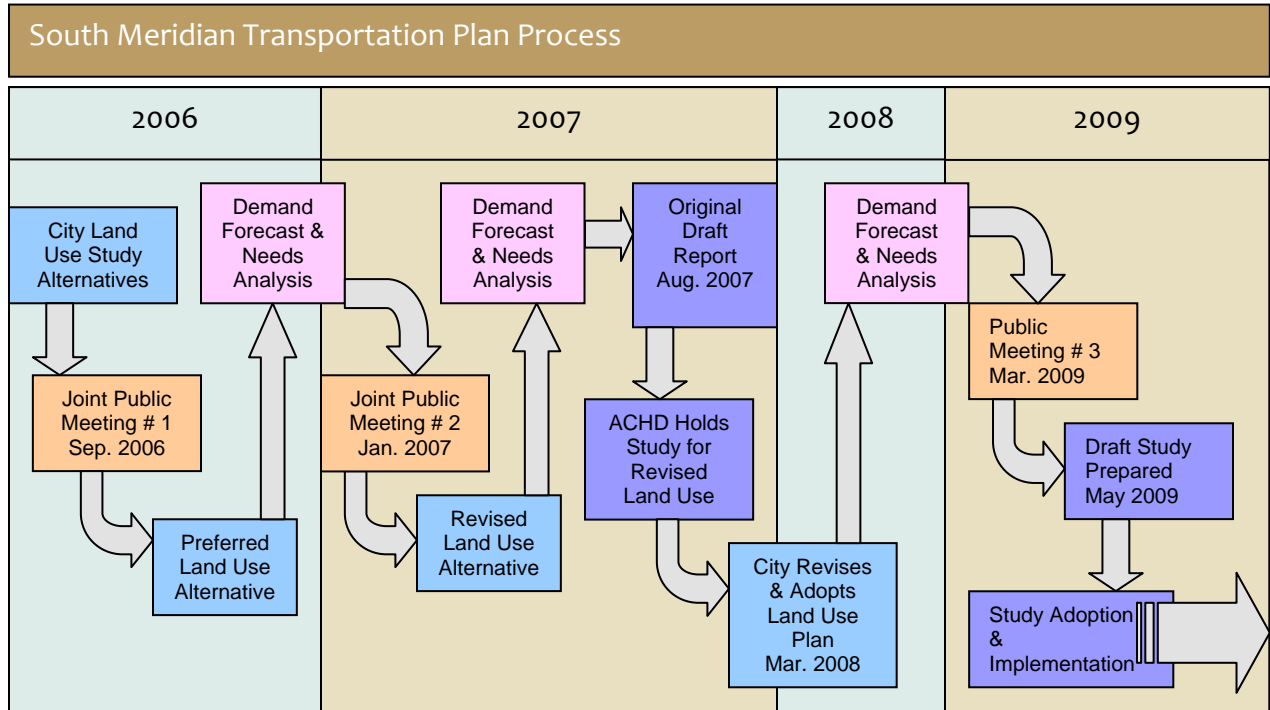
- Adopting the access management standards in the City's Comprehensive Plan
- Adopting the planning level roadway sections in the City's Comprehensive Plan to coordinate desired street sections with ACHD
- Coordinating right-of-way preservation for future roadway improvements to achieve balanced land use and transportation planning
- Coordinating off-street pathways with roadway improvements, especially arterial road crossings

The City of Meridian's roles in implementing the Access Management Plan include:

- Incorporating the Access Management Plan standards into the City's Comprehensive Plan and/or City Code
- Working with ACHD to close, consolidate, and/or relocate access points as appropriate
- Participating in traffic impact study reviews as appropriate
- Administering cross access agreements
- Attending joint pre-application meetings with ACHD on large or complicated projects in the area or as needed

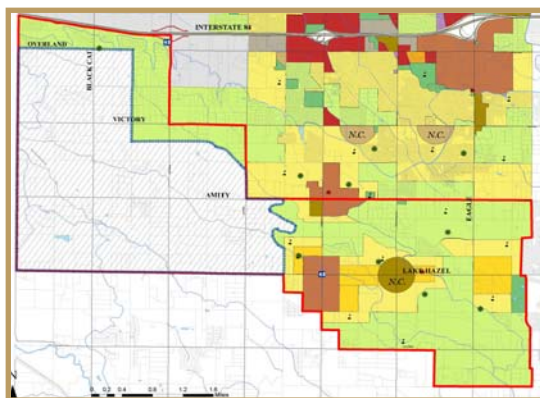
## Plan Process and Update

The South Meridian Transportation Plan started in 2006 in collaboration with the City of Meridian's South Meridian Comprehensive Land Use Amendment process. ACHD and the City of Meridian worked together to investigate the local transportation needs associated with a series of land use demographic scenarios. Coordination and cooperation with the City of Meridian was crucial to the development of the Plan findings and recommendations. Key activities in the Plan, including public meetings, are outlined on the next page in the project time line.



Initially, the City of Meridian developed a preferred land use alternative that showed several arterial roadway segments would need expansion to 7-lanes to accommodate future demand. At a public meeting in January 2007, feedback from stakeholders, the public, and the City of Meridian made it clear that these large arterials were not desirable. A revised land use alternative was developed based on reduced densities. This alternative utilized a more robust collector system and analysis showed that fewer arterials required widening to 7-lanes. A draft of the South Meridian Transportation Plan was submitted to ACHD in August 2007.

Based on staff recommendations and discussion, the ACHD Commission decided to hold the Plan as the City of Meridian revised their land use plan during the winter of 2007-2008. Once the South Meridian Comprehensive Amendment was finalized and adopted in 2008, the ACHD Commission moved to have the South Meridian Transportation Plan updated to reflect components of the draft TLIP and the new land use map. Thus, the proposed collector connections to the arterial roadways have been modified based on draft TLIP recommendations.



2008 Adopted Land Use Plan

## Public Involvement

Public involvement was a critical tool through which public feedback and support for the findings of the South Meridian Transportation Plan were received. Comments from the public helped to shape the ultimate land use assumptions and resulting recommended transportation improvements. The approach included:

- Stakeholder interviews
- Three public information meetings
  - September 20, 2006
  - January 25, 2007
  - March 19, 2009
- Multi-agency coordination meetings and presentations
- Web comment forms and posting of materials

Comments from the public centered on many common themes addressed in the Plan. Common responses from the public involvement activities included:

- Coordinate land use and transportation planning
- Large 7-lane arterials are not desirable
- Improve roadways and intersections to keep pace with growth
- Improve existing congested roadways and intersections first
- The proposed Overland Road Connection needs to be studied in more detail



Discussion at information meeting

These concerns were considered and utilized when the recommendations for the South Meridian Area were made and the Plan update was completed.

## Transportation Needs Analysis

### Existing Conditions

The existing intersection configurations and traffic volumes were used to determine the current LOS of the arterial road intersections. Most of the arterial intersections in the Plan area operate at acceptable LOS D or better except those along Meridian Road (State Highway 69). These intersections fail in the peak hours of the day. The Victory Road/Eagle Road intersection



Existing Overland Road

also experiences lengthy delays in peak hours.

## Land Use Projections and Travel Demand Forecasts

Several land use scenarios were investigated before developing the maps and descriptions adopted by the City of Meridian in March 2008. Land use maps of several scenarios for the South Meridian Area are presented in **Appendix B**. Demographics forecasts based on the Comprehensive Plan Amendment were given to ACHD and COMPASS to forecast travel demand. The recommendations of this Plan reflect these updated demographic assumptions and travel demand forecasts.

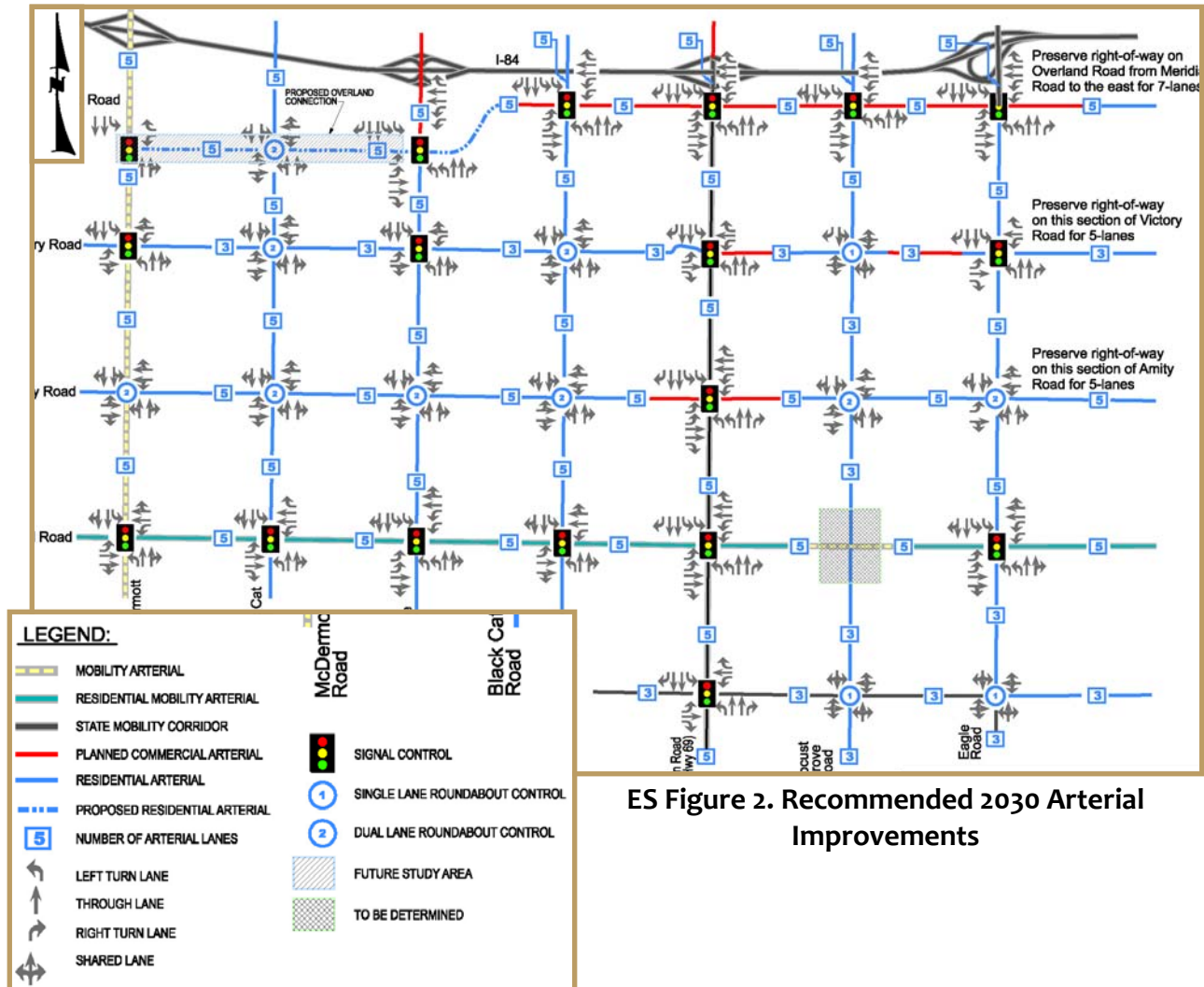
Travel demand forecasts from both the COMPASS 2030 regional model and the ACHD 2030 model were analyzed in the Plan. Both models used the demographic projections provided by the City of Meridian. Despite some technical differences between the two models, the recommendations determined using their forecasts remained largely consistent.

The assumptions used to develop this Plan are different from those used to develop the *Southwest Boise Transportation Study* recommendations. The South Meridian Area is predominantly rural at this time and the forecast demographics and associated travel demand are based on the area being completely built out with planned land uses by the year 2030. In contrast, the Southwest Boise Area currently includes large areas of residential development as well as some rural areas. The 2030 horizon year demographics for that study do not assume a complete build out of the entire area. It is anticipated there will be more development beyond the 2030 horizon year in Southwest Boise and thus the recommended arterial roadway needs may differ somewhat from the South Meridian recommendations.

## Arterial Improvements

A capacity analysis was conducted to determine the arterial roadway needs in the year 2030. LOS E was used as the threshold for identifying needed improvements along principal arterial roadways while LOS D was used as the threshold for minor arterials, using the standards in ACHD's adopted CIP. COMPASS' peak hour forecasts were used as the basis for determining needs. Based on the travel demand, all principal arterials require 5-lanes. All minor arterials require 3-lanes with the exception of Black Cat Road, Linder Road, and portions of Victory Road and Locust Grove Road. They either have demands that require 5-lane roadways or are being preserved for 5-lanes.

Recommended lane configurations are shown in **ES Figure 2**. All 2-lane arterials are assumed to be built out to 3-lanes as development occurs by adding a continuous left turn lane or median to the roadway. The 3-lane facilities provide opportunity to apply access management, improve safety, and reduce delay.



ES Figure 2. Recommended 2030 Arterial Improvements

### Intersection Improvements

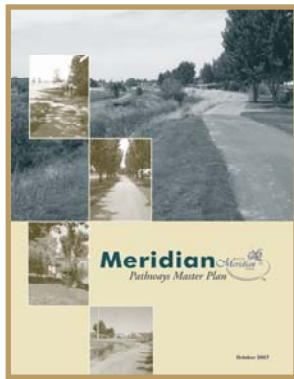
An analysis shows that all of the arterial intersections in the area require improvement to operate at an acceptable LOS in 2030. The recommended intersection configurations and control are also presented in **ES Figure 2**. Overland Road intersections with Meridian Road (State Highway 69), Locust Grove Road, and Eagle Road only require additional turn lanes. All of the intersections along Meridian Road (State Highway 69), with the exception of Columbia Road, operate at LOS F given 2030 forecast travel demand. Improvements to these intersections are recommended.

As an alternative to widening for a standard intersection for the Lake Hazel Road/Locust Grove Road intersection, the owner of the surrounding land has researched some innovative alternatives. Thus, this area is shown in **Figure 3** as to be determined pending further analysis. A brief discussion and example concepts prepared by a potential developer are included in **Appendix G**. Additional traffic analysis and evaluation of the alternatives should be conducted during the application process with ACHD and the City of Meridian.

Developers will be required to mitigate the impacts from their developments, including intersection improvements.

## Pedestrian and Bicycle Travel Plan

All arterials and collectors identified in the South Meridian Transportation Plan will ultimately include dedicated bicycle lanes and sidewalks.



The City of Meridian adopted their *Meridian Pathways Master Plan* in October of 2007. The *Pathways Master Plan* focuses largely on off-street pathways throughout the city, including the South Meridian Area. ACHD is seeking adoption of their *Roadways to Bikeways Plan*. The final draft is currently available for review and comment.

Recommendations, available in these plans, were incorporated into the South Meridian Transportation Plan's recommendations and guidelines. Off-street pathways are coordinated with the access management standards so crossing can be made at controlled intersections.

Recommended short-term bicycle projects will provide signed shared bikeways on several existing collectors between Meridian Road (State Highway 69) and Cloverdale Road south of Overland Road. Recommended mid-term projects in the South Meridian Area include adding bike lanes along several arterials, including:

- Overland Road
- Victory Road
- Amity Road
- Lake Hazel Road
- Ten Mile Road
- Linder Road
- Locust Grove Road



## Corridor Preservation

Several corridors were identified for future preservation as 5-lane and 7-lane roadways even though the 2030 needs analysis did not require these lane configurations for capacity. Corridor

preservation recommendations assume there will be increasing demand beyond the 2030 planning horizon. It is anticipated there will be development beyond the 2030 horizon year in the surrounding areas, including Southwest Boise, which will add demand to the arterials running through the South Meridian Area. Roadways identified for preservation include:

- Overland Road
- Victory Road
- Amity Road
- Linder Road
- Black Cat Road
- McDermott Road

The Overland Road, Victory Road, and Amity Road arterial segment improvements from Eagle Road to Cloverdale Road, where the City of Meridian and the City of Boise planning areas abut, are coordinated with the *Southwest Boise Transportation Study* recommendations. Overland Road from Meridian Road (State Highway 69) to Cole Road is recommended for right-of-way preservation for 7-lanes in both the ACHD CIP and the *Southwest Boise Transportation Study*. This segment is already constructed to 5-lanes. This is noted in **ES Figure 2** to be consistent with these planning documents and forecast needs beyond 2030. If the Overland Road Connection to Canyon County develops, the Airport Road/Overland Road corridor would travel parallel to I-84 from the City of Nampa through the City of Boise. Therefore it is prudent to plan on maintaining the 5-lane cross section of the existing arterials through the proposed connection.

Victory Road requires 3-lanes throughout the South Meridian Area. In the Southwest Boise Area, Victory Road requires 5 lanes in 2030 from Eagle Road to the east. Thus, the segment of Victory Road from Eagle Road to Cloverdale Road should be preserved for 5 lanes in the future as noted in **ES Figure 2**.

The major arterials that are expected to carry traffic from the City of Kuna include Black Cat Road, Ten Mile Road, Linder Road, and Amity Road. These corridors are currently being preserved for 5-lane cross sections by ACHD and the City of Meridian. As these corridors are designed and built as 5-lane roadways and intersections, the reserve capacity should be sufficient to carry any additional traffic generated by areas surrounding the South Meridian Area. Amity Road and Linder Road provide regional connections and Linder Road is expected to have an overpass of I-84 by 2020. Also, the City of Nampa is currently preserving right-of-way along Amity Road for future widening to 5-lanes. McDermott Road has the potential to be a regional north-south arterial with a connection to I-84. Preserving these corridors for 5-lanes is recommended and is consistent with current ACHD practice.

Amity Road only requires a 3-lane section east of Eagle Road. However, the potential for additional traffic demands beyond 2030 and the needs identified in the *Southwest Boise Transportation Study* make it prudent to preserve right-of-way for 5-lanes on this segment. The transition from the 5-lane section west of Eagle Road to the 3-lane section east of Eagle Road can be provided smoothly through the roundabout intersection proposed at the Amity Road/Eagle Road intersection. The second westbound lane can be added on the approach to the roundabout and one of the eastbound lanes can be designated as a turn only lane on the approach. **ES Figure 2** shows the inside eastbound lane designated as a left turn only for example purposes.

### Overland Road Connection

The potential for public/private partnerships make a future Overland Road Connection feasible and desirable given the need to improve traffic operations adjacent to the interchange. A realignment of Overland Road and the intersection with Ten Mile Road was approved and will be completed as part of the Ten Mile interchange project construction and a public/private agreement for development of Southridge. A representation of this alignment is shown in green east of Ten Mile Road in **ES Figure 3**.



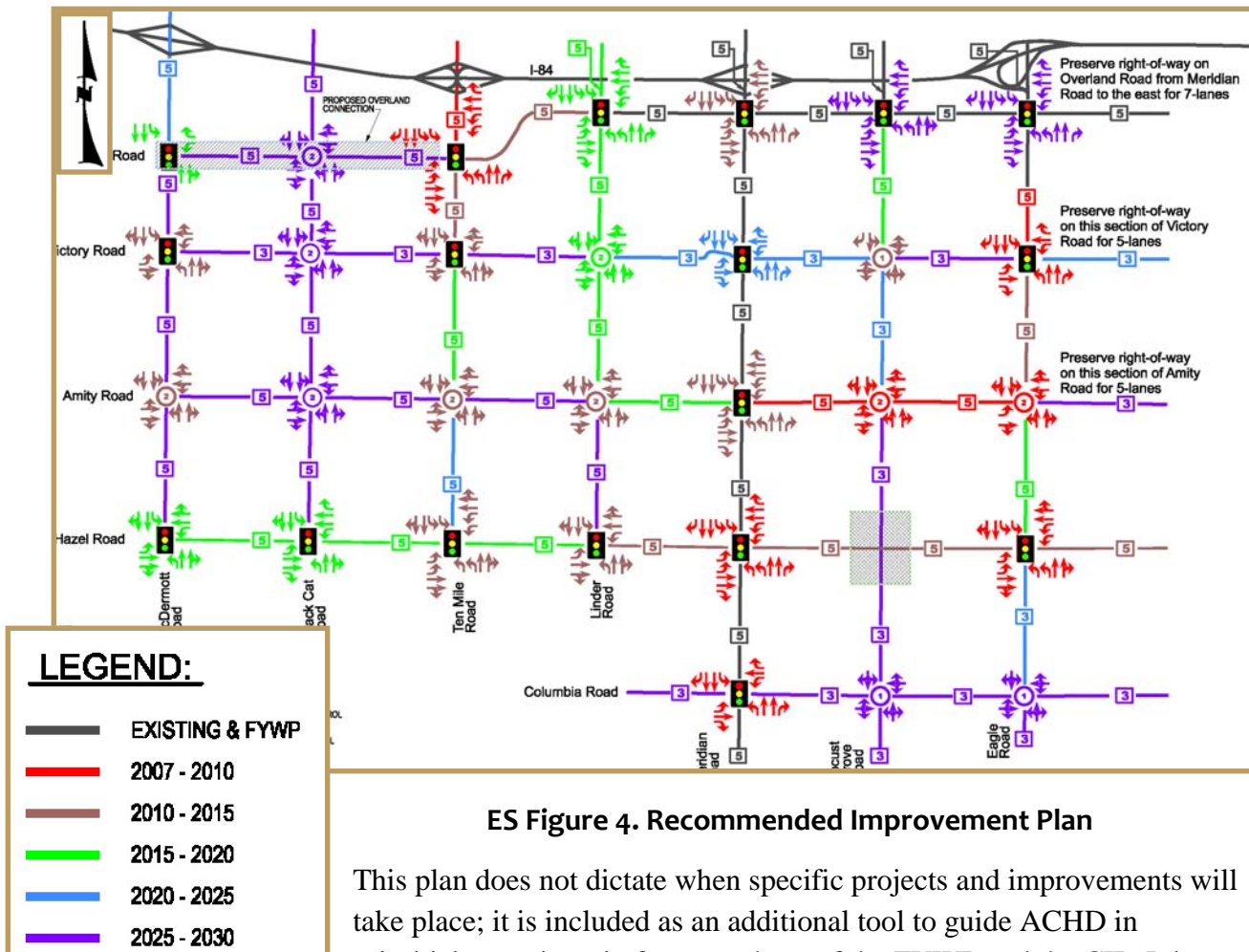
**ES Figure 3. Potential Overland Road Connection Alignments**

Additionally, the City of Nampa will be studying the future needs along Airport Road in the future. Due to Airport Road’s proximity to a realigned Overland Road ACHD staff is currently discussing the coordination an Overland Road realignment study with the Airport Road Study.



## Improvements Plan

An analysis was conducted to approximately determine when improvements may be needed between 2009 and 2030. The recommended roadway improvement plan is depicted in **ES Figure 4**. A color code shows when the 2030 build out intersections and roadway segment improvements are recommended for implementation based on current conditions and growth assumptions. Generally, intersection improvements are required before roadway segment improvements.



**ES Figure 4. Recommended Improvement Plan**

This plan does not dictate when specific projects and improvements will take place; it is included as an additional tool to guide ACHD in prioritizing projects in future updates of the FYWP and the CIP. It is based on several assumptions, particularly the location and pace of development. Adjustments should be made as development occurs so that improvements are provided as they become needed. Some changes are anticipated as the City of Kuna updates their comprehensive plan. Also, the east-west arterial segment improvements from Eagle Road to Cloverdale Road where the City of Meridian and the City of Boise planning areas abut may need improvement sooner than the Southwest Boise improvement plans show at this time. These recommendations are also

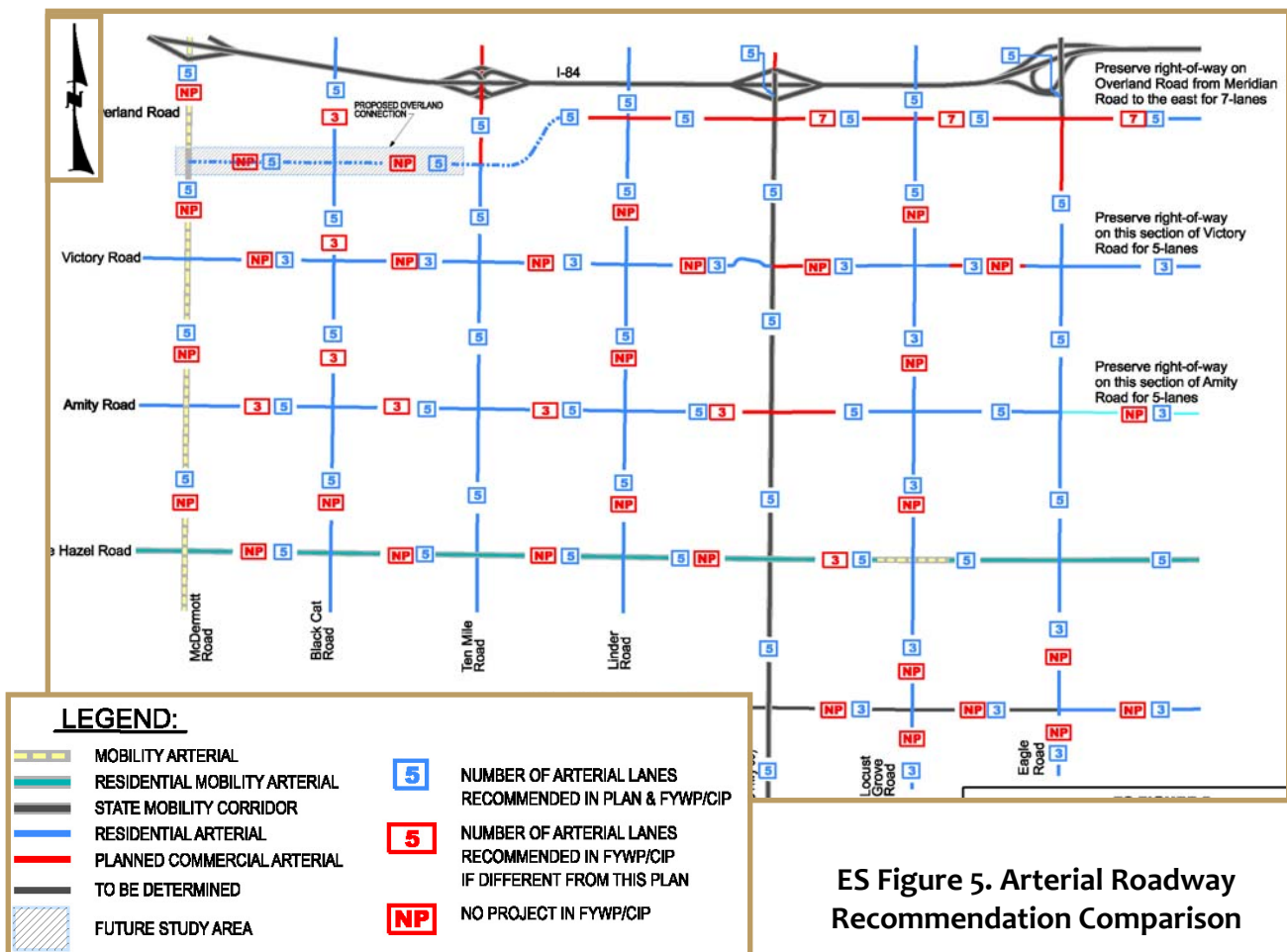
based on the assumption that full build-out of the South Meridian Area occurs by 2030. Changes in growth and development may mean a longer time frame for full build-out.

## Cost Estimates

Estimated costs for the recommended improvements, including right-of-way and construction, are \$234,066,000. Estimates are in 2008 dollars, are conceptual, and assume no contributing funds from other sources.

## Comparison with Existing Capital Plans

A comparison of this Plan’s roadway recommendations and the FYWP and CIP recommendations is found in **ES Figure 5**. The number of lanes recommended for each arterial segment in this Plan is shown in **blue**. If the FYWP/CIP number of lanes recommended for each arterial segment is different, they are shown in **red** next to this Plan’s recommendations. If there is no project in the FYWP/CIP a red **NP** is shown next to this Plan’s recommendations. If the FYWP/CIP number of lanes recommended for each arterial segment is the same, no red symbol is shown.



ES Figure 5. Arterial Roadway Recommendation Comparison

Costs totaled for the South Meridian Area in the CIP came to \$157,905,000. The additional cost needed to implement the recommendations of the Plan is approximately \$76,161,000. This estimate is subject to change depending on the cost of construction materials, right-of-way, and the rate of inflation. Some of the additional costs may be offset through public-private partnerships with land developers.

The recommendations and cost estimates between this Plan's roadway recommendations and the FYWP and CIP recommendations differ because of underlying differences in land use assumptions and build out time frames.

- The CIP represents a view of 20 years
- The South Meridian Transportation Plan represents a view out to 2030
- Growth levels and land-use information represents build-out that could take longer than the 20 years or beyond 2030
- Corridor preservation will be required as development occurs and the level of development may need review of appropriate funding mechanisms are not achieved.
- The South Meridian Transportations Plan's travel demand forecasts are based on the City of Meridian's specific land use growth scenario the vary from the *Communities in Motion* scenario used in the CIP

If there is a difference between the improvements or right of way recommended in this Plan and the CIP, whichever requires the greatest right-of-way or improvement will be required.

## Responsibility for Providing Improvements

Several of the arterial roadway and intersection improvements identified in this Plan are not included in the adopted FWYP or CIP. If an arterial improvement identified in this Plan is not planned for in the adopted CIP but is required due to the timing of development, options exist for implementation. For arterials or intersections, if an improvement is required prior to being programmed in ACHD's FYWP or CIP, developers will be required to dedicate the ultimate right-of-way and may be required to construct the improvement. Compensation for any eligible system improvements will be subject to a development agreement between ACHD and the developer. Collector roadways will require the right-of-way to be dedicated to ACHD and will be built with the developments.

## Access Management Plan

Access Management standards were developed and applied to the street typology categories in the South Meridian Area. The Access Management Plan provides for collaboration between ACHD and the City of Meridian to ensure access restrictions along arterials in the South Meridian Area are appropriate for adjacent land uses while ensuring required mobility. The South Meridian Access Management Standards are outlined in **ES Figure 6**. All of the access management standards are based on the future urban/suburban character of this area and represent the minimum spacing between access points allowed along arterial roadways.

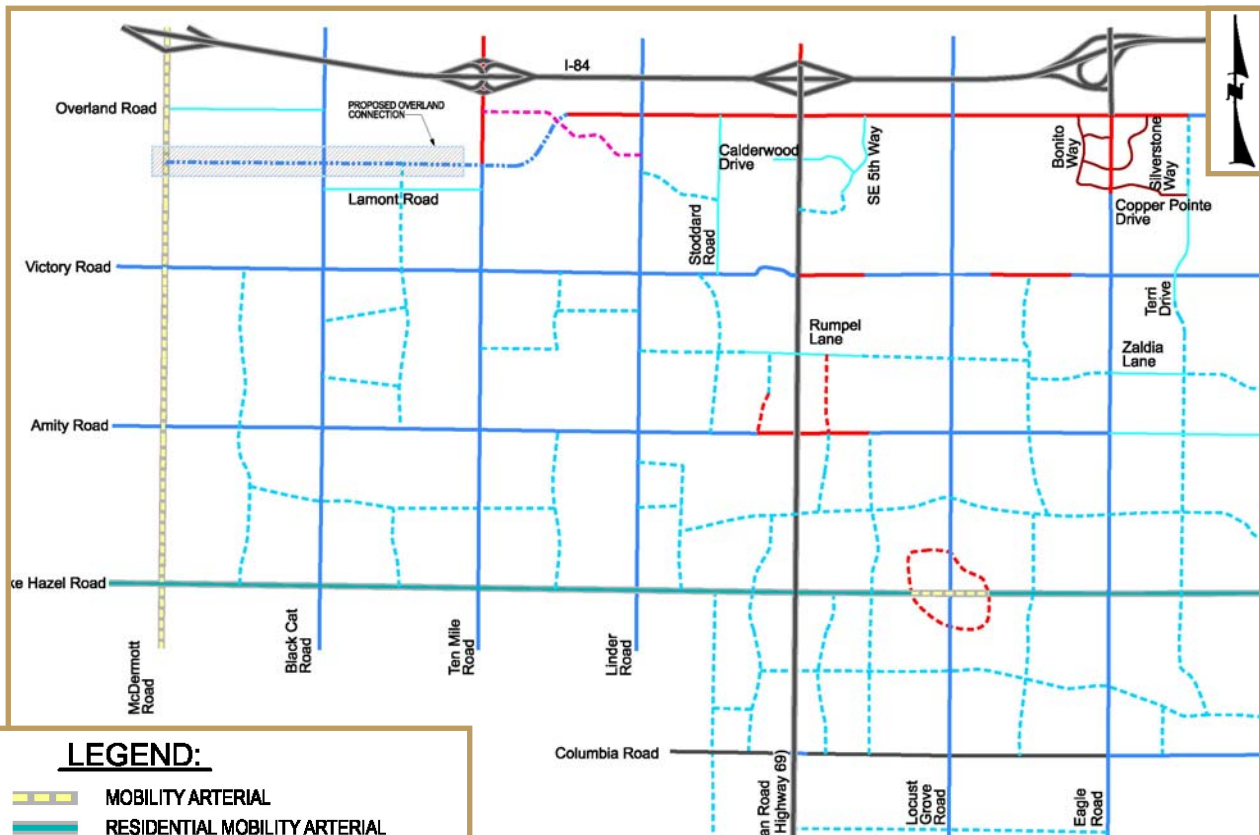
**ES Figure 6. South Meridian Access Management Standards**

Street Typology	Minimum Access Spacing Standards*			
	Minimum Signal Spacing	Full Access	Right-in/Right-out/Left-in Access	Right In/Right Out Access
<b>State Highways</b>	½ mile = 2,640-feet	½ mile = 2,640-feet		
<b>Mobility Arterials</b>	½ mile = 2,640-feet	½ mile = 2,640-feet	¼ mile = 1,320-feet	
<b>Residential Mobility Arterials</b>	½ mile = 2,640-feet	½ mile = 2,640-feet	¼ mile = 1,320-feet	⅛ mile = 660-feet
<b>Planned Commercial &amp; Residential Arterials</b>	½ mile = 2,640-feet	¼ mile = 1,320-feet		⅛ mile = 660-feet
<b>Town Center Collector</b>	Refer to current ACHD <i>Policy Manual</i>			
<b>Commercial Collector</b>				
<b>Residential Collector</b>				
<b>Local Road</b>				
*All standards are minimum distances. If an access point is allowed, it must be justified by an approved Traffic Impact Study.				

Access to development is required from lesser classified streets when the development fronts more than one street. Access points shall be evaluated and considered for specific land uses through the development application process. If an access point is approved for an identified land

use, that access point may be required to be relocated and/or restricted in the future if the land use intensifies or the property redevelops. The need for an access point must be demonstrated and justified in a traffic impact study before it will be allowed.

A good collector roadway network is critical to the implementation and success of an Access Management Plan. Collectors connect properties and local roads to arterial roadways, thus reducing the need for a large number of connections to arterial roadways. Future development should design projects to access arterials using the collector network shown in **ES Figure 7**. Collectors will require right-of-way to be dedicated and will be built by development.



ES Figure 7. Proposed Collector Network and Street Typologies

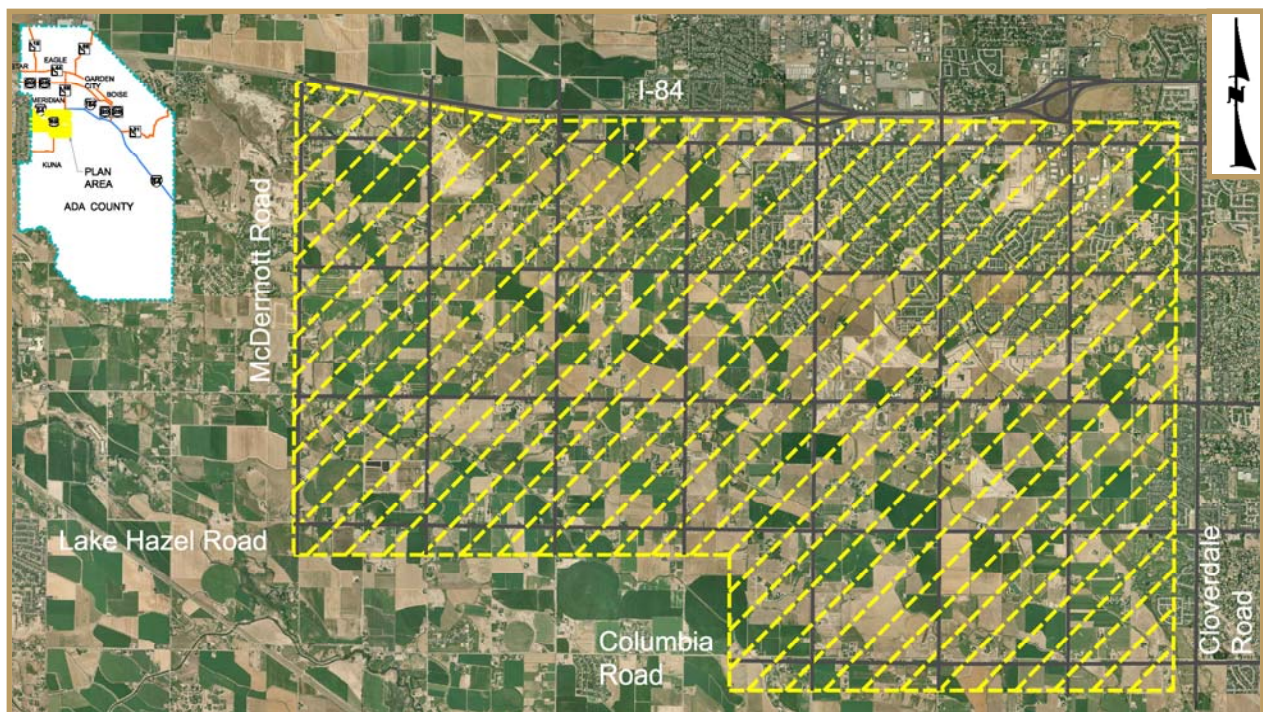
## Next Steps

The South Meridian Transportation Plan findings and recommendations should be reviewed periodically (e.g. every 3-5 years) with the FYWP/CIP updates to ensure they accurately represent the transportation needs in the South Meridian Area. As land in the area develops and travel patterns change, adjustments and revisions by ACHD and the City of Meridian may be necessary to best serve the roadway users traveling through the South Meridian Area.

## Project Background

### South Meridian Transportation Plan Objectives

The South Meridian Transportation Plan was commissioned by the Ada County Highway District (ACHD) to identify future roadway, intersection, and corridor needs as travel demand in the area increases. The South Meridian Area is bounded by Interstate 84 (I-84) to the north, Lake Hazel Road and ½ mile south of Columbia Road to the south, McDermott Road to the west, and ¼ mile west of Cloverdale Road to the east. A map of the South Meridian Transportation Plan Area and vicinity is presented in **Figure 1**.



**Figure 1. South Meridian Transportation Plan Area**

Primary objectives of the Plan include:

- Identification of planning level roadway and intersection improvements based on the forecasted travel demand from a specific City of Meridian land use plan
- Development of an Access Management Plan for the South Meridian Area
- Preparation of estimated planning level right-of-way and construction needs and costs
- Comparison of identified needs and estimated costs with those in ACHD's *Capital Improvements Plan (CIP)*
- Guidance for future pedestrian and bicycle improvements in South Meridian
- Investigation of a potential Overland Road connection west of Ten Mile Road

This Plan will serve as the transportation policy for the South Meridian Area. As it is implemented all roadway and intersection improvements, roadway cross-sections, access points and pedestrian facilities should be designed and constructed following the standards and guidelines included in the Plan. Following adoption of the South Meridian Transportation Plan by ACHD, appropriate sections will be incorporated in to the City of Meridian’s Comprehensive Plan. These steps by ACHD and the City of Meridian will ensure the best interaction between land use planning and the transportation system as this area develops and is built-out. Policy could be affected by the following:

- Where there are differences between the CIP and this Plan, whichever requires the greater right-of-way will be followed.
- *Transportation and Land Use Integration Plan* (TLIP) street typologies, as included, are still in draft form and subject to change until adopted by the ACHD Commission and the City of Meridian.
- Inclusion of amended growth from Kuna, based on their new Comprehensive Plan, will need to be reviewed at the appropriate time as these demographics have not been fully included into the projections.
- A proposed Neighborhood Center at the Lake Hazel Road / Locust Grove Road intersection may require an alternative intersection treatment to preserve a safe and pedestrian friendly environment and meet the City’s land use goals
- The Plan addresses time frames for improvements but is not a schedule for improvements and will need to be specifically reviewed as the *Five Year Work Plan* (FYWP) and CIP updates are completed.
- Changes in the Plan may be required since recommendations are based on the 2030 *Communities in Motion* (CIM) and the adopted Meridian Comprehensive Plan

## Agencies Involved in the Plan

Coordination between transportation and land use planning agencies in the South Meridian Area was critical to the development of the Plan. Several agencies served on a project team used to provide input and make collaborative decisions. Agencies participating on this team included:

- ACHD
- City of Meridian
- Community Planning Association of Southwest Idaho (COMPASS)



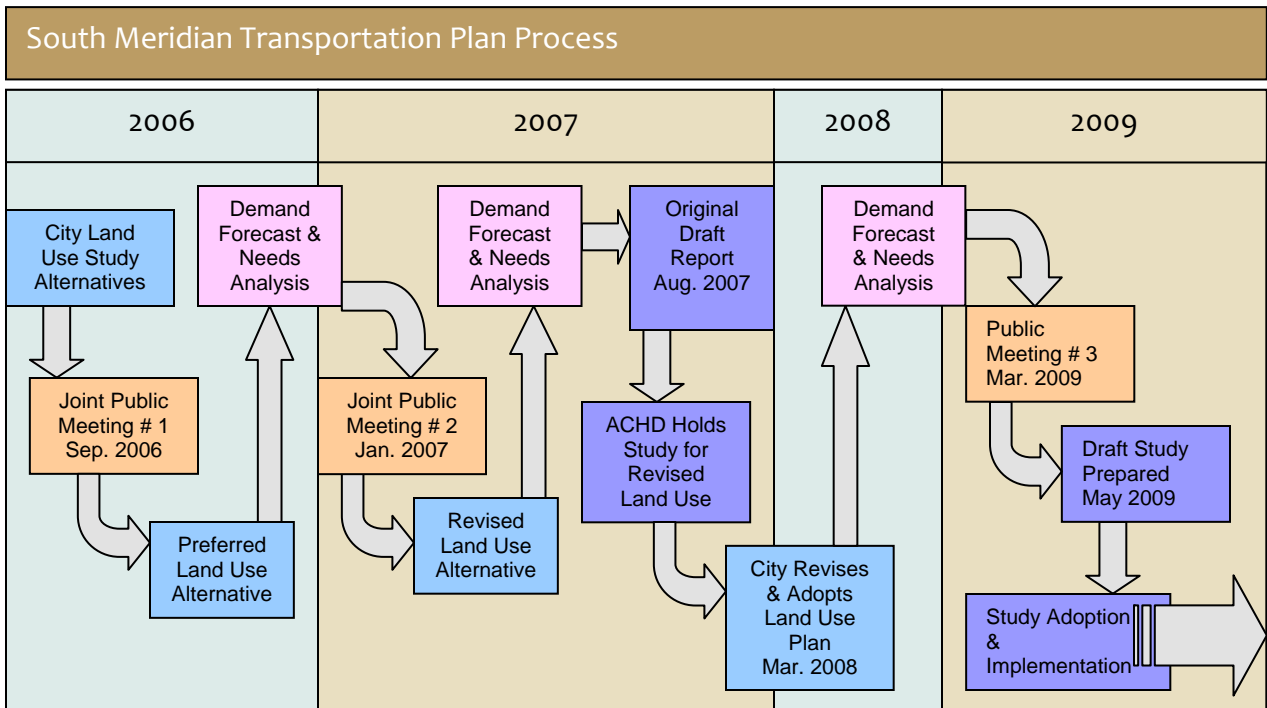
Other agencies were involved in specific meetings or separate interviews as input was obtained throughout the Plan. These included:

- City of Kuna
- Meridian Joint School District No. 2
- ACHD Commuteride
- Idaho Transportation Department (ITD)

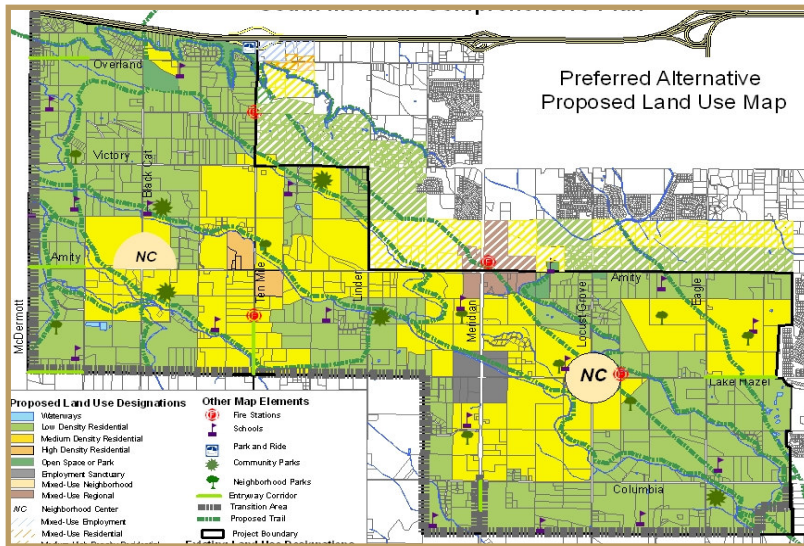
## Plan Process and Update

Key Plan activities, including public meetings, are outlined in the project timeline. The South Meridian Transportation Plan was initiated in 2006 in collaboration with the City of Meridian’s South Meridian Comprehensive Land Use Amendment process. ACHD and the City of Meridian worked together to investigate the local transportation needs associated with a series of land use demographic scenarios. Coordination and cooperation with the City of Meridian was crucial to the development of the Plan findings and recommendations.

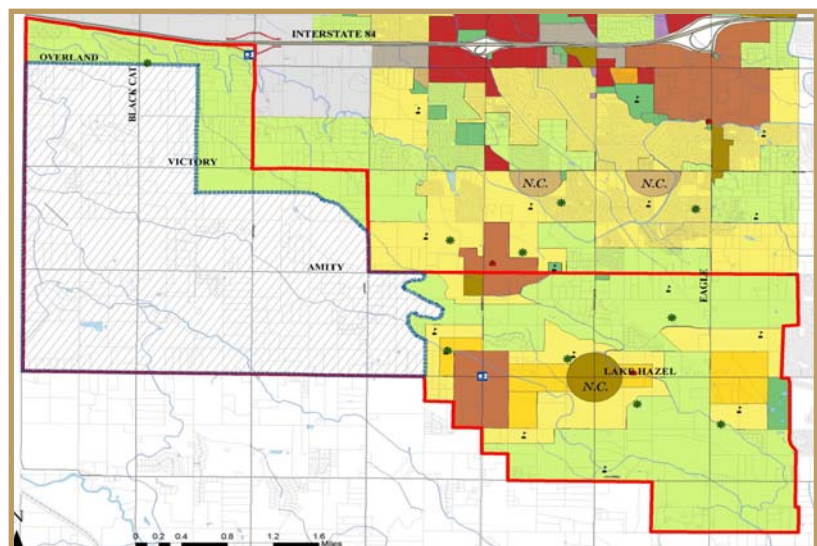
Initially, the City of Meridian developed a preferred land use alternative that showed several arterial roadway segments would need expansion to 7-lanes to accommodate future demand. At a public meeting in January 2007, feedback from stakeholders, the public, and the City of Meridian made it clear that these large arterials were not desirable. A revised land use alternative was developed based on reduced densities. This alternative utilized a more robust collector system and analysis showed that fewer arterials required widening to 7-lanes. A draft of the South Meridian Transportation Plan was submitted to ACHD in August 2007.



Based on staff recommendations and discussion, the ACHD Commission decided to hold the Plan as the City of Meridian revised their land use plan during the winter of 2007-2008. Once the South Meridian Comprehensive Amendment was finalized and adopted in 2008, the ACHD Commission moved to have the South Meridian Transportation Plan updated to reflect components of the draft *Transportation and Land Use Integration Plan (TLIP)*. The proposed land use maps developed iteratively during this process are presented in **Appendix B**.



2007 Initial Land Use Plan



2008 Adopted Land Use Plan

## Public Involvement

### Public Involvement Approach

Public involvement was a critical tool through which public feedback and support for the findings of the South Meridian Transportation Plan were received. Comments from the public helped to shape the ultimate land use assumptions and resulting recommended transportation improvements. The approach included:

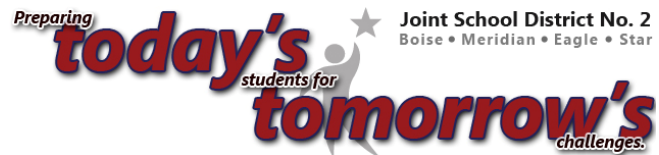
- Stakeholder interviews
- Three public information meetings
  - September 20, 2006
  - January 25, 2007
  - March 19, 2009
- Multi-agency coordination meetings and presentations
- Web comment forms and posting of materials

Public involvement materials are found in **Appendix C**.

### Stakeholder Interviews

Meetings were held with stakeholders in the South Meridian Area, including additional agencies, to gather their input. These stakeholders included:

- Meridian Joint School District No. 2
- ACHD Commuteride
- City of Kuna



The Meridian Joint School District No. 2 focused on their existing schools in the area, Mary McPherson Elementary and Lake Hazel Elementary. These schools access Amity Road and Lake Hazel Road which are both projected to require widening to 5-lanes at sometime in the future. Their largest concern was anticipated difficulty with turning into and out of school property from such large arterials.



ACHD Commuteride has heard comments from the community supporting additional park & ride lots at the proposed I-84 interchanges at Ten Mile Road and McDermott Road as they are developed and will support any planning and design.

The City of Kuna has been concerned with their ultimate shared boundary with the City of Meridian. They felt improvements to Ten Mile Road south of I-84 are critical, especially once the proposed interchange is constructed. Kuna is



actively working with ITD to restrict access to Meridian Road (State Highway 69).

## Meridian City Council Presentation

ACHD staff made a presentation to the Meridian City Council on March 17, 2009. This presentation reported on the status of the transportation study, including the land use updates and assumptions, potential roadway sizing, potential intersection treatments, and the roadway typologies and collector network connections. The council asked some questions of ACHD staff.

These questions focused on whether the potential effects of the City of Kuna's comprehensive plan update to travel demand forecasts in the South Meridian Area were accounted for in the Plan. Several arterial roadways are being preserved for future widening to 5-lane cross sections even though the needs analysis does not show needs for them, including Black Cat Road, Ten Mile Road, Linder Road, and Amity Road. Thus, they will have reserve capacity to handle travel demands significantly higher than the Plan forecasts, up to 50% more, and should be able to carry additional traffic from Kuna. Lastly, the Ten Mile Road / Amity Road roundabout is expected to operate adequately in the future even if travel demand increases beyond the Plan forecasts.

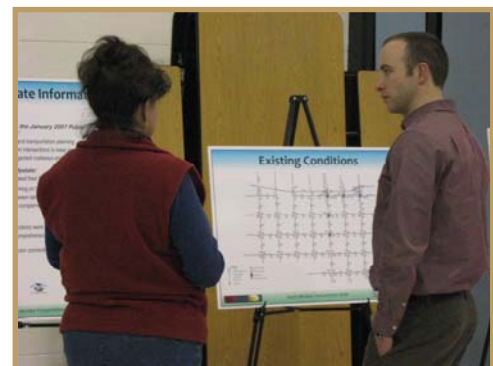
A detailed response is included in **Appendix C**.

## Findings of the Public Information Meetings

The City of Meridian prepared and hosted a public meeting for the South Meridian Comprehensive Plan Amendment on September 20, 2006. ACHD attended this meeting and shared graphics depicting existing and 2030 forecast daily travel demand on the arterial roadways included in the South Meridian Area. Almost 200 participants attended and provided input on the need for transportation improvements to provide capacity for existing as well as the forecasted travel demand.

A second public information meeting was held on January 25, 2007 to present the results of the South Meridian Transportation Plan needs analysis. The Access Management Plan and the potential Overland Road Connection were also presented. Comments from the public centered on many common themes to be addressed in the Plan. Common responses included:

- Coordinate land use and transportation planning
- Large 7-lane arterials are not desirable
- Improve roadways and intersections to keep pace with growth
- Improve existing congested roadways and intersections first



Discussion at information meeting

- The proposed Overland Road Connection needs to be studied in more detail

The City of Meridian revised the preferred land use alternative with reduced densities based on the recommendations and public comment. An analysis was completed with this updated land use alternative and a more robust collector network. The results of this analysis showed that fewer arterials required widening to 7-lanes.

The most recent public information meeting was held on March 19, 2009. Purposes of the Plan, proposed roadway and intersection improvements, and access management strategies were presented to the public. The meeting was held jointly with an information meeting about the proposed roundabout intersection improvements at the Ten Mile Road and Amity Road intersection. General comments included:

- Good planning coordination between ACHD and the City of Meridian
- Individual land owners had questions regarding how the planning will affect their property
- More discussion is needed before implementing roundabouts in the South Meridian Area

All of the concerns and comments received were considered and utilized when the recommendations for the South Meridian Area were made and the Plan area updated.

## Data Collection and Existing Conditions

### Concurrent Planning Studies & Activities

Several studies and other planning activities have been completed or are in the process of being completed in the South Meridian Area are listed below. These studies were researched and pertinent information was gathered from each for use in the South Meridian Transportation Plan.

- *ACHD Capital Improvements Plan*
- *ACHD 2009-2013 Five-Year Work Plan*
- *ACHD Transportation and Land Use Integration Plan (TLIP)*
- *ACHD Kuna-Mora Road Corridor Study-Phase I*
- *ACHD Southwest Boise Transportation Study & Eagle/Cloverdale Alignment*
- *ACHD Ada County Roundabout Study: Draft Roundabout Application Guidelines for Ada County*
- *ACHD Roadways to Bikeways Plan*
- *ACHD Collector Road Study*
- *COMPASS Travel Demand Model*
- *ACHD Travel Demand Model*
- *Communities in Motion Regional Long-Range Transportation Plan*
- *I-84, Ten Mile Road Interchange Project*
- *Idaho 16, I-84 to Idaho 44 Environmental Study*
- *City of Meridian Ten Mile Interchange Specific Area Plan*
- *City of Meridian South Meridian Comprehensive Plan Amendment*
- *City of Meridian Pathways Master Plan*

### Field Review

A field review of the arterial roadways and intersections throughout the South Meridian Area was conducted to determine the existing roadway and intersection configurations, traffic control, current land use, and existing access. Existing traffic turning movement counts and daily traffic



Existing Overland Road

volumes were also collected and are provide in **Appendix D**. Current roadway and parcel information in the South Meridian Area was provided by the Geographic Information Systems (GIS) Division of ACHD for use in estimating future right-of-way impacts to adjacent parcels based on the recommended improvements to roadways and intersections.

## Existing Conditions

The current arterial roadway configurations, including number of lanes, intersection control, and current daily traffic volumes in the South Meridian Area are presented in **Figure 2**.

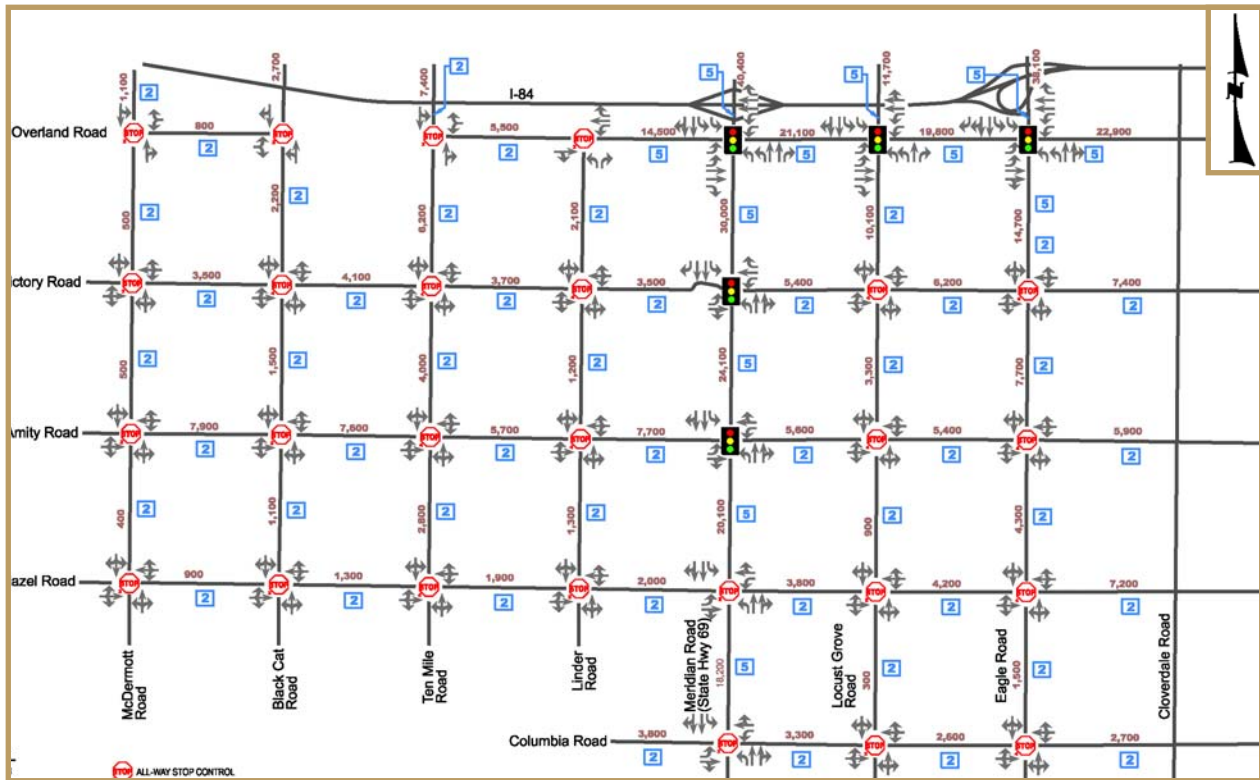


Figure 2. Existing Conditions

## Capacity Analysis

The arterials in the South Meridian Area operate at acceptable level of service (LOS) D or better in the peak hours. Several approaches to congested intersections do experience large delays as vehicles stack up to enter the intersection. The existing arterial intersections capacity analysis was performed using the Highway Capacity Software (HCS+) based on the 2000 edition of the *Highway Capacity Manual*. The existing intersection configurations and traffic volumes were used to determine the current LOS of the arterial road intersections. Most of the arterial intersections in the Plan area operate at acceptable LOS D or better except those along Meridian Road (State Highway 69). These intersections fail in the peak hours of a normal day. The Victory Road/Eagle Road intersection also experiences lengthy delays in the peak hours.

## Alternative Transportation Services

There are alternative transportation services currently operating in the South Meridian Area. ACHD Commuteride maintains two park & ride lots, one each at the Eagle Road and Meridian

Road interchanges. They also lease areas for two park-and-ride lots in Kuna and users travel on Meridian Road (State Highway 69) to access I-84. These park-and-ride lots are located at:

- The Paul’s Market parking lot on Kuna Road
- The Church of Jesus Christ of Latter-Day Saints parking lot on Avalon Street

ValleyRide, the services division of Valley Regional Transit (VRT), the regional public transportation authority for Ada and Canyon counties in southwest Idaho, has two inter-county routes that serve the South Meridian

Area near the Meridian Road and Eagle Road interchanges, Route # 40 and Route # 42.



Park & ride services and buses provide choices for users who want to use alternate transportation. They help reduce the number of personal vehicles on the roadways, thus helping reduce traffic congestion and improve air quality by promoting alternatives to driving alone.

## Intelligent Transportation Systems

Intelligent transportation systems (ITS) incorporate the use of electronics, communications, and computers to improve transportation efficiency and safety. Traffic signals in the South Meridian Area are operated and maintained by ACHD and are coordinated through the Traffic Management Center (TMC). Closed Circuit Television (CCTV) cameras are in operation at many of the traffic signals in the South Meridian Area.



CCTV Cameras

These cameras relay real time video of the intersections to the TMC and allow ACHD to:

- Detect incidents and guide management of those incidents
- Inform dispatchers so they can route responders to an incident
- Post still images from the cameras on ACHD’s website
- Identify congested areas and take actions to alleviate the affects of congestion

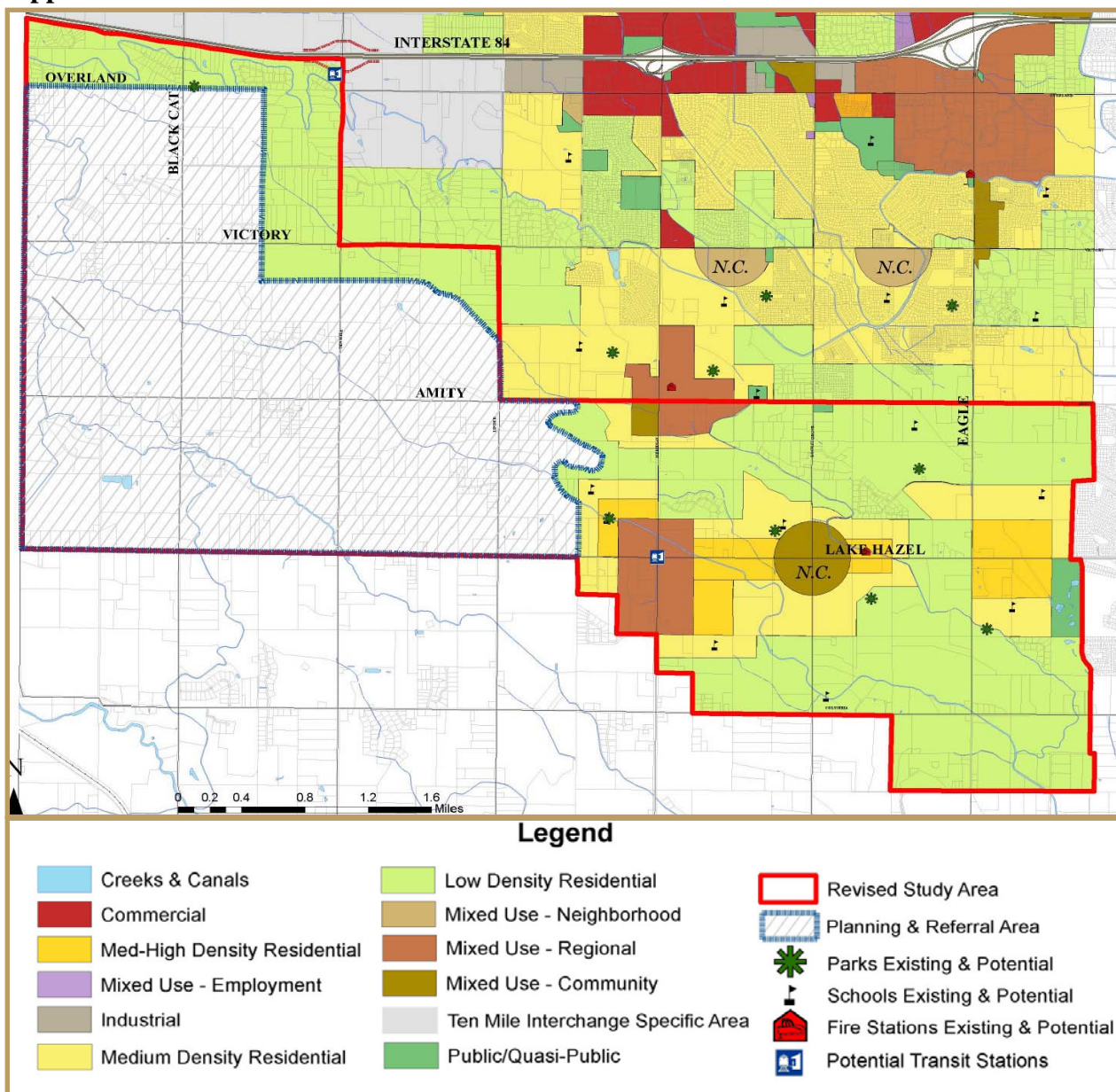


DMS

The CCTV cameras are controlled by ACHD with links to the Ada County Sheriff, ITD, State Communications Center, Boise State University, and local radio and TV stations. There are Dynamic Message Signs (DMS) located on the I-84 in both the eastbound and westbound directions between the Meridian Road and Eagle Road interchanges. These DMS provides messages to motorists regarding traffic conditions and incidents.

## Land Use Projections and Travel Demand Forecasts

The City of Meridian has completed a planning and public involvement process to develop the South Meridian Comprehensive Plan Amendment. This amendment includes an area that was outside the city’s area of impact but will likely be annexed into Meridian at some time in the future. Once the South Meridian Comprehensive Amendment, based on reduced densities, was finalized and adopted in 2008, the ACHD Commission moved to have the South Meridian Transportation Plan updated to reflect components of the draft TLIP. The proposed land use maps for the South Meridian Area developed iteratively during this process are presented in **Appendix B**.



2008 Adopted Land Use Plan

## Demographic Projections for Areas without Development Plans

The City of Meridian's amendment set aside the southwest portion of the South Meridian Area as a Future Planning and Referral Area where specific land uses were not designated.

Discussions with City of Meridian planning staff led to an estimated demographic forecast for this area of one household unit per 3 acres, on average. These estimated demographics were given to ACHD and COMPASS to forecast travel demand. The recommendations of this Plan reflect these updated demographic assumptions and travel demand forecasts.

In a presentation to the Meridian City Council, ACHD staff was asked if the travel demand modeling included the latest land use plans from the City of Kuna. COMPASS transportation planners explained that the travel demand model currently includes the approved comprehensive plan from the City of Kuna and the City is in the process of updating that plan. COMPASS will include the City's updated plan in their update to the regional the long range transportation plan. ACHD will study the North Kuna Area in the future and at that time updated demographic information will be requested from the City of Kuna and used for forecasting. Impacts from additional growth will be analyzed and future development impacts on North Kuna and South Meridian arterials not included in the CIP or other planning documents will have to be mitigated by the developers.

The major arterials that are expected to carry traffic from the City of Kuna include Black Cat Road, Ten Mile Road, Linder Road, and Amity Road. These corridors are currently being preserved for 5-lane cross sections by ACHD and the City of Meridian. The 2030 needs analysis shows that most of these corridors only need 3-lane cross sections and thus they include reserve capacity to handle travel demands significantly higher than currently forecast, up to 50% more. As these corridors are designed and built as 5-lane roadways and intersections, the reserve capacity should be able to carry additional traffic from Kuna.

## Comparison with the Southwest Boise Transportation Study

The assumptions used to develop this Plan are different from those used to develop the *Southwest Boise Transportation Study* recommendations. The South Meridian Area is predominantly rural at this time and the forecast demographics and associated travel demand are based on the area being completely built out with planned land uses by the year 2030. In contrast, the Southwest Boise Area currently includes large areas of residential development as well as some rural areas. The 2030 horizon year demographics for that study do not assume a complete build out of the entire area. It is anticipated there will be more development beyond the 2030 horizon year in Southwest Boise and thus the recommended arterial roadway needs may differ somewhat from the South Meridian recommendations.

## Transportation Needs Analysis

A needs analysis was performed to develop recommended arterial and intersection improvements for 2030 forecast travel demands in the South Meridian Area. Preservation of right-of-way for 5-lane sections is recommended for several arterials. Typical roadway cross sections and intersections and guidelines for pedestrian and bicycle facilities are presented. All analysis and calculations follow the methodologies described in the **Appendix E**.

## Travel Demand Forecast Assumptions

Travel demand forecasts from both the COMPASS 2030 regional model and the ACHD 2030 model were analyzed in the Plan. COMPASS is the metropolitan planning organization (MPO) for the Treasure Valley and their regional travel demand model is the official and adopted model for planning, prioritizing, and funding transportation projects throughout the region, including the South Meridian Area in Ada County. ACHD's county wide model has a more robust collector network, smaller traffic analysis zones (TAZ), and different assumptions for trip assignment than the COMPASS model. Travel demand forecasts from both models were developed using inputs provided by the City of Meridian. Despite the technical differences between the two models, the recommendations determined using their forecasts remained largely consistent. **Appendix F** presents a description of the land uses, demographic input, traffic analysis zones (TAZs), and the travel demand forecasts for the City of Meridian's growth scenario.

## Needs Analysis

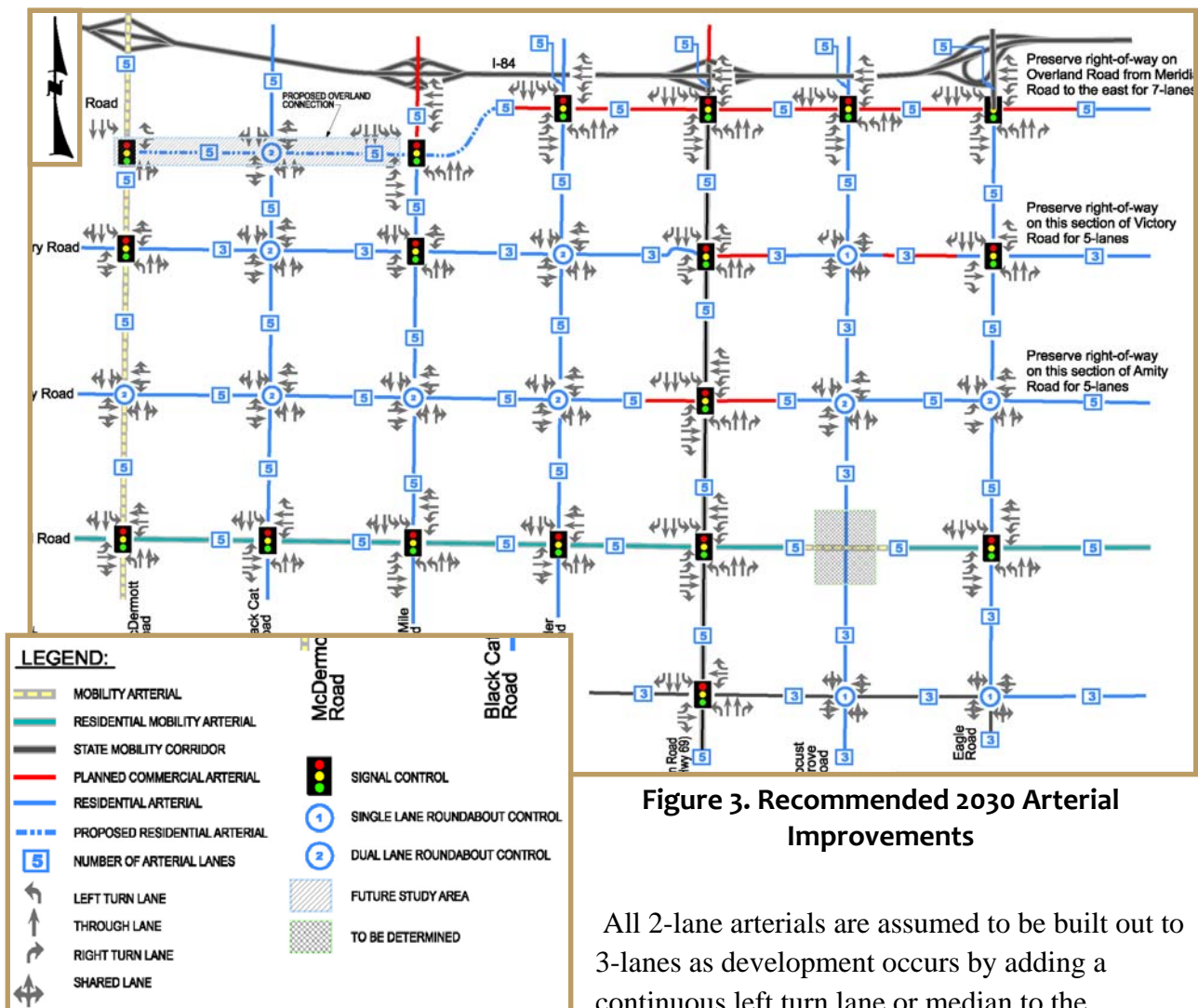
The Plan roadways were evaluated using the forecast travel demands and the arterial street capacity thresholds developed for the adopted ACHD CIP. These thresholds were developed from the Florida Department of Transportation (FDOT) multi-modal policy and application tools for arterial street planning and are consistent with the Federal Highway Administration's (FHWA's) Highway Capacity Manual. They are based on peak hour traffic volume in the peak direction on an arterial. LOS E was used as the threshold for identifying needed improvements along principal arterial roadways and LOS D was used for minor arterials, consistent with the adopted CIP. Arterial roadways were analyzed using COMPASS' peak hour model travel demand forecasts.

Arterial road intersections were also analyzed using COMPASS' peak hour model travel demand forecasts to estimate turning movements. The Highway Capacity Software Plus (HCS+) was used to analyze signalized intersections and FHWA's capacity methods in *Roundabouts: An Informational Guide* were used to analyze roundabouts. LOS E was used as the threshold for principal arterial intersections and LOS D was used for all other intersections in the analysis.

Specific assumptions and values used in the intersection capacity analysis are found in the **Appendix E**.

### Arterial Improvements

A detailed capacity analysis was conducted to determine the arterial roadway needs in the year 2030. Based on travel demand, all principal arterials require 5-lanes. All minor arterials require 3-lanes with the exception of Black Cat Road, Linder Road, and portions of Victory Road and Locust Grove Road. They either have demands that require 5-lane roadways or are being preserved for 5-lanes. Recommended lane configurations are shown in **Figure 3**.



**Figure 3. Recommended 2030 Arterial Improvements**

All 2-lane arterials are assumed to be built out to 3-lanes as development occurs by adding a continuous left turn lane or median to the roadway. The 3-lane facilities provide opportunity to apply access management, improve safety, and reduce delay. If these arterial roadway improvements are not in the adopted CIP, they will be required as a part of development.

No improvements are shown for Meridian Road (State Highway 69) though the forecast demands from both models show a need for a 7-lane section along the majority of this roadway. ITD does not have plans to improve the roadway but is will conduct a State Highway 69 corridor study which may include recommendations for future widening.

## Intersection Improvements

All arterial intersections in the Plan area were evaluated to determine advantageous locations based on the guidelines in the *Ada County Roundabout Study: Draft Roundabout Application Guidelines for Ada County*. Roundabouts were considered the preferred intersection geometry along Amity Road to be consistent with the completed roundabout study recommendations. If a roundabout treatment at an intersection was determined to fail in the 2030 capacity analysis, signalized intersections were considered. **Figure 4** lists the intersections identified as eligible for roundabouts and the estimated level of service given the 2030 forecast travel demand.

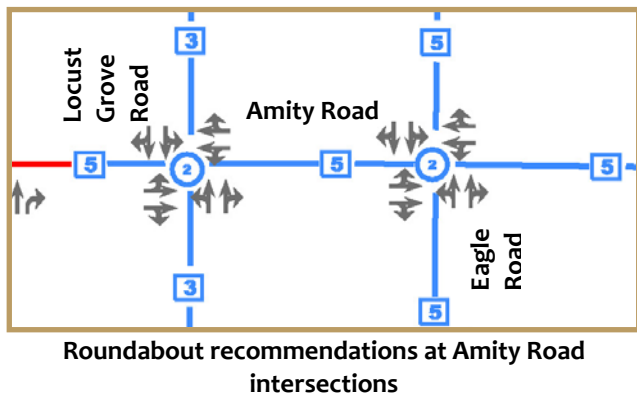
**Figure 4. 2030 Roundabout Analysis Summary**

# Lanes	Intersection	LOS
2	Overland and Black Cat	A
1	Victory and Black Cat	A
2	Victory and Linder	A
1	Victory and Locust Grove	C
2	Amity and McDermott	A
2	Amity and Black Cat	A
2	Amity and Ten Mile	A
2	Amity and Linder	A
2	Amity and Locust Grove	A
2	Amity and Eagle	A
1	Columbia and Locust Grove	A
1	Columbia and Eagle	A

PM peak hour turning movements were estimated for each intersection using the WinTurns software. Some adjustment were made to accommodate future traffic volumes at intersections that only have three legs now and are forecast to have four, such as the Overland Road

intersections with Black Cat Road, Ten Mile Road, and Linder Road. Estimated turning movements for each arterial intersection are found in **Appendix F**.

Analysis showed that all of the arterial intersections in the area require improvement to operate at an acceptable LOS in 2030. The recommended intersection configurations and controls are also presented in **Figure 3**. HCS+ output for the intersections are available upon request. The Overland Road intersections with Meridian Road (State Highway 69), Locust Grove Road, and Eagle Road only require additional turn lanes. All of the intersections along Meridian Road (State Highway 69), with the exception of Columbia Road, operate at LOS F during the peak hour given 2030 forecast travel demand. Improvements to these intersections on the highway are recommended based on configurations that will work with the current number of roadway lanes and help reduce delay to users.



The Amity Road intersections with Locust Grove Road and Eagle Road are recommended to be improved with roundabouts. The current draft FYWP includes a roundabout at the Eagle Road intersection and the ACHD commission will make the final decision on the type of intersection improvement that will be implemented at these locations.

As an alternative to widening for a standard intersection for the Lake Hazel Road/Locust Grove Road intersection, the owner of the surrounding land has researched some innovative alternatives. Thus, this area is shown in **Figure 3** as to be determined pending further analysis. A brief discussion and example concepts prepared by a potential developer are included in **Appendix G**. Additional traffic analysis and evaluation of the alternatives should be conducted during the application process with ACHD and the City of Meridian.

Developers will be required to mitigate the impacts from their developments, including intersection improvements.

### Roadway Travel Demand Comparison

Roadway travel demand forecasts from the COMPASS 2030 model and the ACHD 2030 model were analyzed. Forecasts from both were similar and the results of the roadway needs analyses were almost identical. The one location where there was a significant difference between the models' travel demand forecasts was along Lake Hazel Road east of Linder Road. The COMPASS model indicated a need for a 7-lane cross section while the ACHD model indicated a

need for a 5-lane cross section. The COMPASS forecast demands in question are less than 10% over the thresholds for a 5-lane cross section and the City of Meridian has indicated a desire to maintain 5-lanes along this roadway, especially in areas where regional mixed use and neighborhood centers are proposed. For these reasons, 5-lanes are considered adequate for the future travel demand along Lake Hazel Road.

### Corridor Preservation

Several corridors were identified for future preservation as 5-lane and 7-lane roadways even though the 2030 needs analysis did not require these lane configurations for capacity. Corridor preservation recommendations assume there will be increasing demand beyond the 2030 planning horizon. It is anticipated there will be development beyond the 2030 horizon year in the surrounding areas, including Southwest Boise, which will add demand to the arterials running through the South Meridian Area. Roadways identified for preservation include:

- Overland Road
- Victory Road
- Amity Road
- Linder Road
- Black Cat Road
- McDermott Road

The Overland Road, Victory Road, and Amity Road arterial segment improvements from Eagle Road to Cloverdale Road, where the City of Meridian and the City of Boise planning areas abut, are coordinated with the *Southwest Boise Transportation Study* recommendations. Overland Road from Meridian Road (State Highway 69) to Cole Road is recommended for right-of-way preservation for 7-lanes in both the ACHD CIP and the *Southwest Boise Transportation Study*. This segment is already constructed to 5-lanes. This is noted in **Figure 3** to be consistent with these planning documents and forecast needs beyond 2030.

If the Overland Road Connection to Canyon County develops, the Airport Road/Overland Road corridor would travel parallel to I-84 from the City of Nampa through the City of Boise. Therefore it is prudent to plan on maintaining the 5-lane cross section of the existing arterials through the proposed connection.

Victory Road requires 3-lanes throughout the South Meridian Area. In the Southwest Boise Area, Victory Road requires 5 lanes in 2030



Linder Road  
recommendations

from Eagle Road to the east. Thus, the segment of Victory Road from Eagle Road to Cloverdale Road should be preserved for 5 lanes in the future as noted in **Figure 3**.

The major arterials that are expected to carry traffic from the City of Kuna include Black Cat Road, Ten Mile Road, Linder Road, and Amity Road. These corridors are currently being preserved for 5-lane cross sections by ACHD and the City of Meridian. As these corridors are designed and built as 5-lane roadways and intersections, the reserve capacity should be sufficient to carry any additional traffic generated by areas surrounding the South Meridian Area.

Amity Road and Linder Road provide regional connections and Linder Road is expected to have an overpass of I-84 by 2020. The City of Nampa is currently preserving right-of-way along Amity Road for future widening to 5-lanes. McDermott Road has the potential to be a regional north-south arterial with connections to I-84 and with Kuna-Mora Road.

Amity Road only requires a 3-lane section east of Eagle Road. However, the potential for additional traffic demands beyond 2030 and the needs identified in the *Southwest Boise Transportation Study* make it prudent to preserve right-of-way for 5-lanes on this segment. The transition from the 5-lane section west of Eagle Road to the 3-lane section east of Eagle Road can be provided smoothly through the roundabout intersection proposed at the Amity Road/Eagle Road intersection. The second westbound lane can be added on the approach to the roundabout and one of the eastbound lanes can be designated as a turn only lane on the approach. **Figure 3** shows the inside eastbound lane designated as a left turn only for example purposes.

Lastly, both travel demand model forecasts include improvements to other facilities near the South Meridian Area, including:

- A proposed collector network
- Lake Hazel Road Extension to the east
- McDermott Road connections to I-84, Kuna-Mora Road, and over the Boise River to State Highway 16
- Improvements to the arterials in the Southwest Boise Study Area and Canyon County

Should any of these facilities be delayed or not implemented, traffic patterns will change and the existing arterials in the Plan area may carry more traffic, requiring additional capacity.

Preserving these corridors for 5-lanes is recommended and is consistent with current ACHD practice.

If interim conditions exist where these corridors are widened to 3-lane roadways, the remaining ground between the edge of pavement and the right-of-way line should be graded and treated with gravel until ultimate widening occurs.

## Overland Road Connection

The existing Overland Road and Ten Mile Road intersection is located too close to the location of a new interchange with I-84 at Ten Mile Road to operate adequately. A potential realignment of the intersection and connection of Overland Road from east of Ten Mile Road to McDermott Road was investigated and a planning level evaluation of two alternative alignments between Ten Mile Road and Black Cat Road was conducted. The conceptual alignments are presented in **Figure 5** and the original evaluation is presented in **Appendix H**. The potential connection will be an entirely new roadway and is not currently included in the ACHD CIP.

Construction of the Ten Mile interchange is currently planned to begin in the summer of 2009. A developer seeking to develop the southeast quadrant of the Ten Mile Road/Overland Road intersection expressed an interest in providing a realigned Overland Road through his property to a new intersection on Ten Mile Road. The potential for public/private partnerships make a future Overland Road Connection feasible and desirable given the need to improve traffic operations adjacent to the interchange. A realignment of Overland Road and the intersection with Ten Mile Road was approved and will be completed as part of the Ten Mile interchange project construction and a public/private agreement for development of Southridge.

A representation of this alignment is shown in green east of Ten Mile Road in **Figure 5**.



**Figure 5. Potential Overland Road Connection Alignments**

Additionally, the potential Overland Road Connection may continue west to align with Airport Road in Canyon County rather than connect with the existing one mile segment of Overland Road between Black Cat Road and McDermott Road. The City of Nampa will be studying the future needs along Airport Road in the future. Due to Airport Road's proximity to a realigned Overland Road ACHD staff is currently discussing the coordination an Overland Road realignment study with the Airport Road Study.

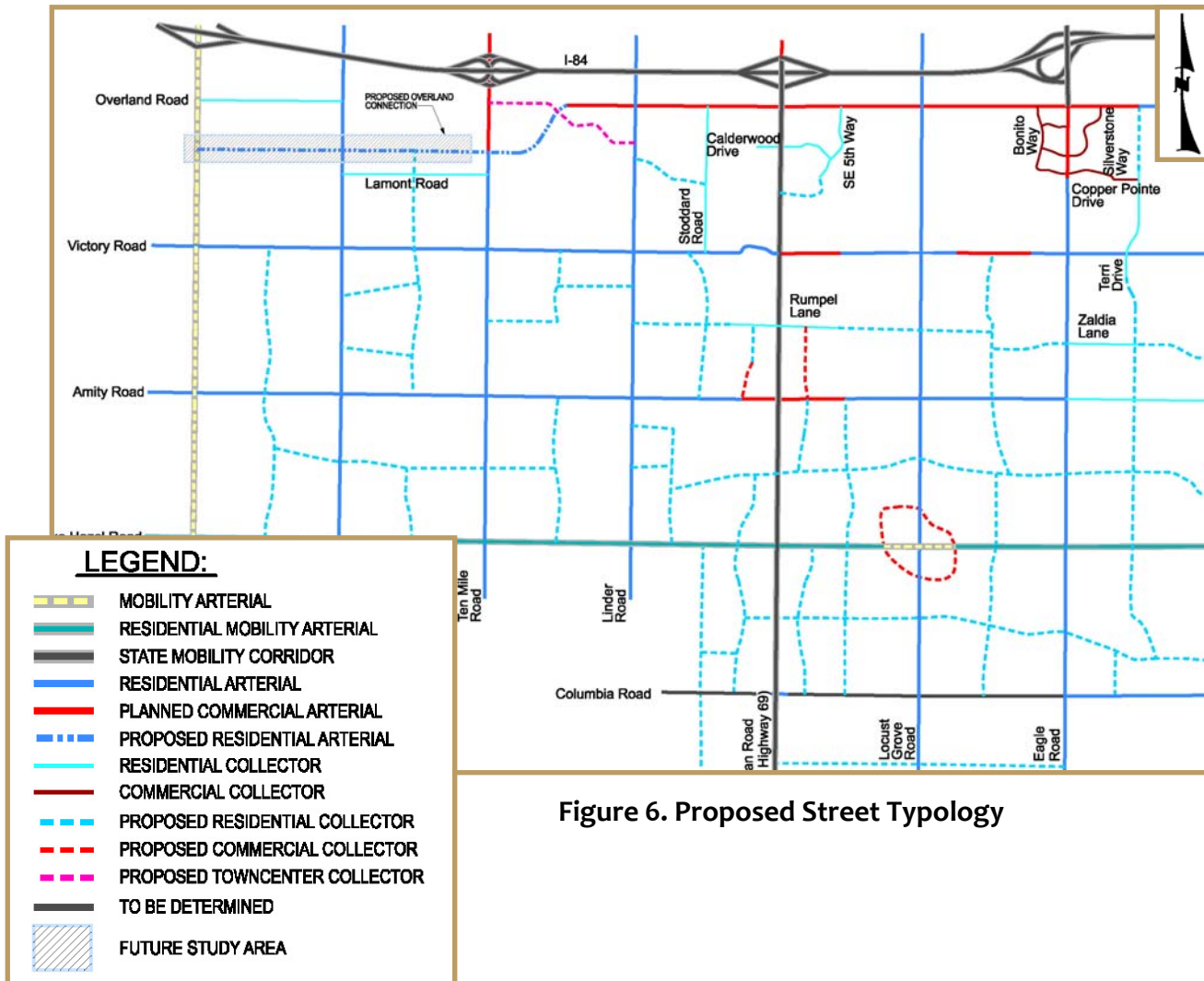
The Overland Road Connection alignment from Ten Mile Road to McDermott Road was included in the arterial network in the forecast growth scenario modeled for the South Meridian Transportation Plan.

## Planning Level Roadways and Intersections

The ACHD *Livable Street Design Guide* and *Street Typology Map*, both part of TLIP, were used as a starting point for determining planning level, or conceptual, roadway cross sections for the South Meridian Transportation Plan. ACHD's *Intersection Planning Level Standards* were used to determine planning level intersection improvements for the Plan. The only intersections not included in ACHD's standards are the conceptual roundabout intersections developed for this Plan.

These tools are generic and interchangeable. The standard roadways and intersections identified in this section serve as templates that will provide an adequate LOS for 2030 travel demand. They are ideal improvements and all future project designs will be subject to contextual analysis. The ACHD *Livable Street Design Guide* and *Street Typology Map*, as adopted by ACHD, should be used to develop roadway cross sections in the South Meridian Area. If they are not desired, ACHD's standard street sections should be used if both ACHD and the City of Meridian agree it is appropriate.

**Figure 6** presents the street typologies for arterials and collectors and the proposed collector network in the South Meridian Area and thus where the planning level cross sections apply.



**Figure 6. Proposed Street Typology**

### Typical Planning Level Roadways

All of the cross sections include travel lanes, bicycle lanes, curb and gutter, buffer zones, and sidewalks. They also include non-traversable raised medians as an access management tool. Adequate width for bicycle use is provided and should be marked with an 8-inch line to separate the bicycle lanes from the roadway. Bicycle lanes should be continuous between intersections. Bicyclists may travel through arterial intersections on the bike lanes, stopping at intersection stop bars and following traffic rules, or they can cross using the pedestrian crosswalks.

All arterial and collector cross-sections presented include buffer zones between the sidewalks and curb and gutter that may allow treatments such as tree planting and street furniture, as appropriate. They also provide separation between vehicles on the roadway and pedestrians on

the sidewalk. Detailed design will determine whether the buffers are included in the plans for specific roadway improvements; thus the buffer zone and overall dimensions may vary. Agreements between ACHD and the City of Meridian regarding the landscape treatments and responsibilities for maintenance will be generated for each project under ACHD’s draft *Interagency Cost Share Policy* on a case-by-case basis. The intent of this policy is to maintain flexibility for ACHD staff to work around the unique features of projects and recognize the desires of the partnering agencies for roadway features within their boundaries. ACHD’s standard street sections can also be used.

The cross sections proposed for Mobility Arterials and Residential Mobility Arterials are presented in **Figure 7**.

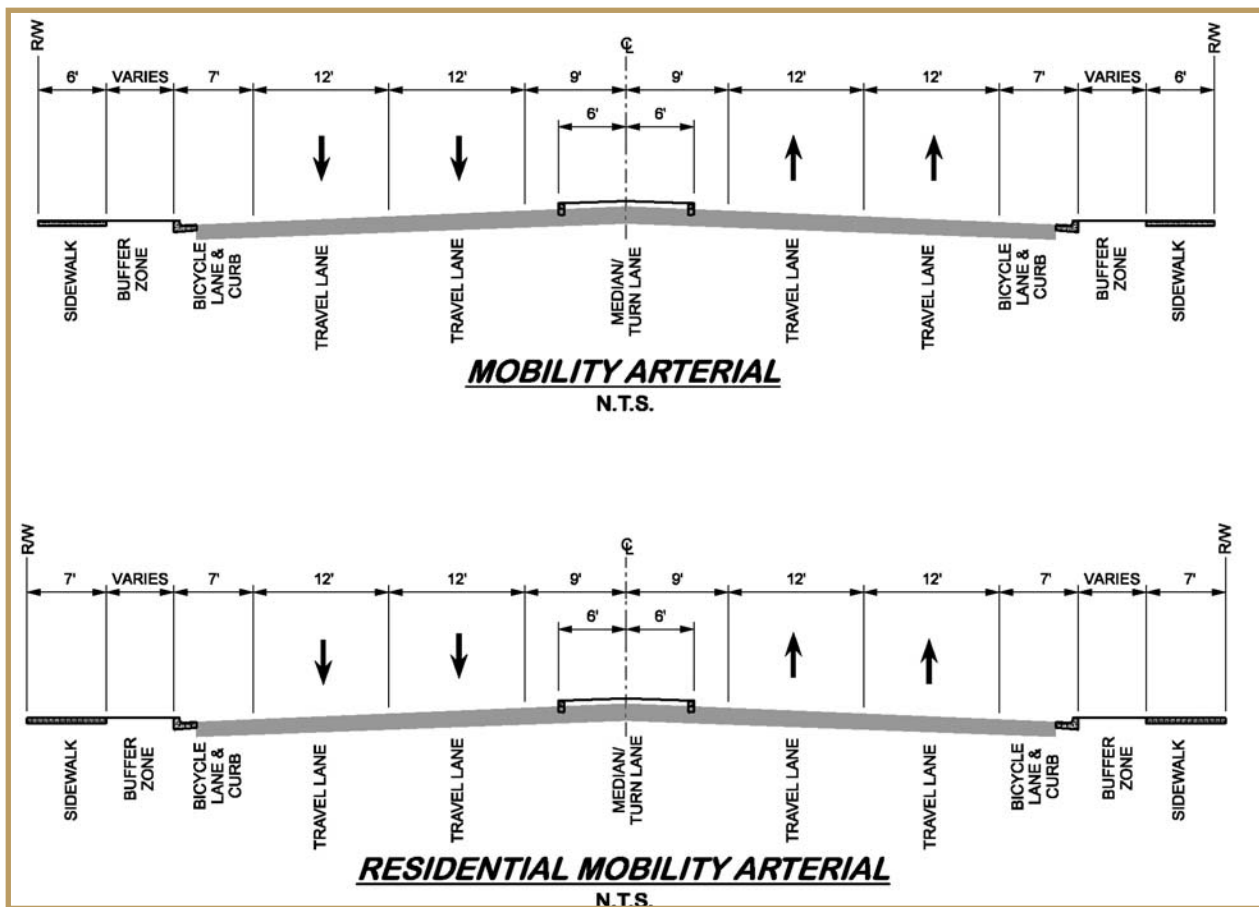


Figure 7. Mobility & Residential Mobility Arterial Cross Sections

The cross sections proposed for Planned Commercial and Residential Arterials are presented in **Figure 8**. These cross sections are identical because they are assigned as typologies on many of the same roadways in the South Meridian Area. Portions of Overland Road, Victory Road, Amity Road, and Ten Mile Road are designated as both Planned Commercial and Residential Arterials in different segments on the draft *Street Typology Map*. In the draft *Livable Street Design Guide*, the recommended widths for medians, lanes, bicycle lanes, and sidewalks are identical. Although Planned Commercial Arterials may allow on-street parking between the bicycle lanes and the gutters, parking is not included in the South Meridian planning level cross sections for two reasons.

- The section of Overland Road designated as Planned Commercial Arterial is already built out with the needed number of lanes, bike lanes, and sidewalks without on-street parking
- The remaining Planned Commercial Arterial locations are ½ mile or less in length and connect separate portions of Residential Arterials which do not allow on-street parking.

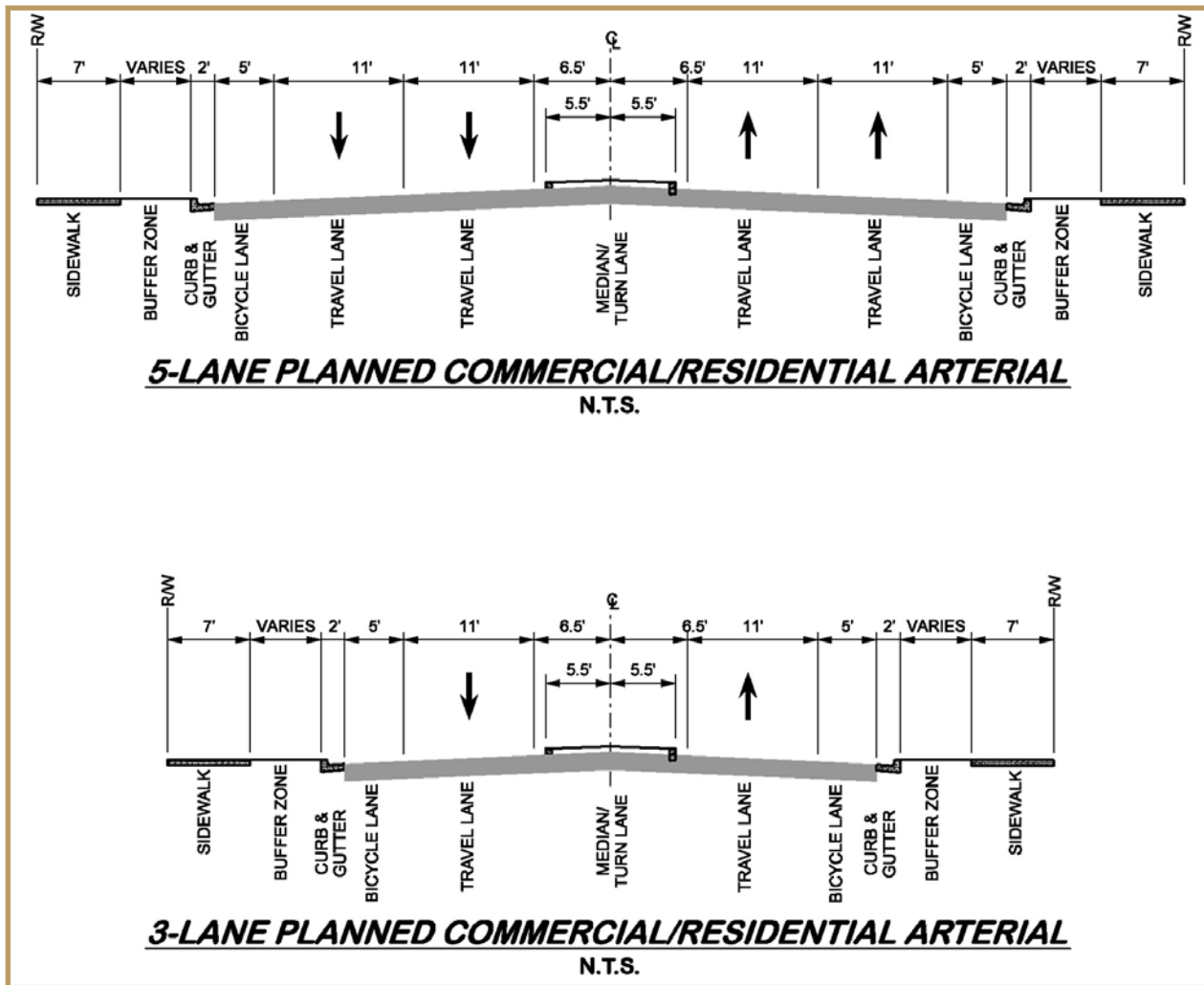


Figure 8. Planned Commercial / Residential Arterial Cross Sections

### Collectors

The cross sections proposed for collectors are presented in **Figure 9**. All collectors include on-street parking facilities, including curb and gutter. Parking on collectors could be allowed if the appropriate land uses are planned for, such as commercial development with door fronts at the sidewalk and the building pulled up to the street or front-on residential housing.

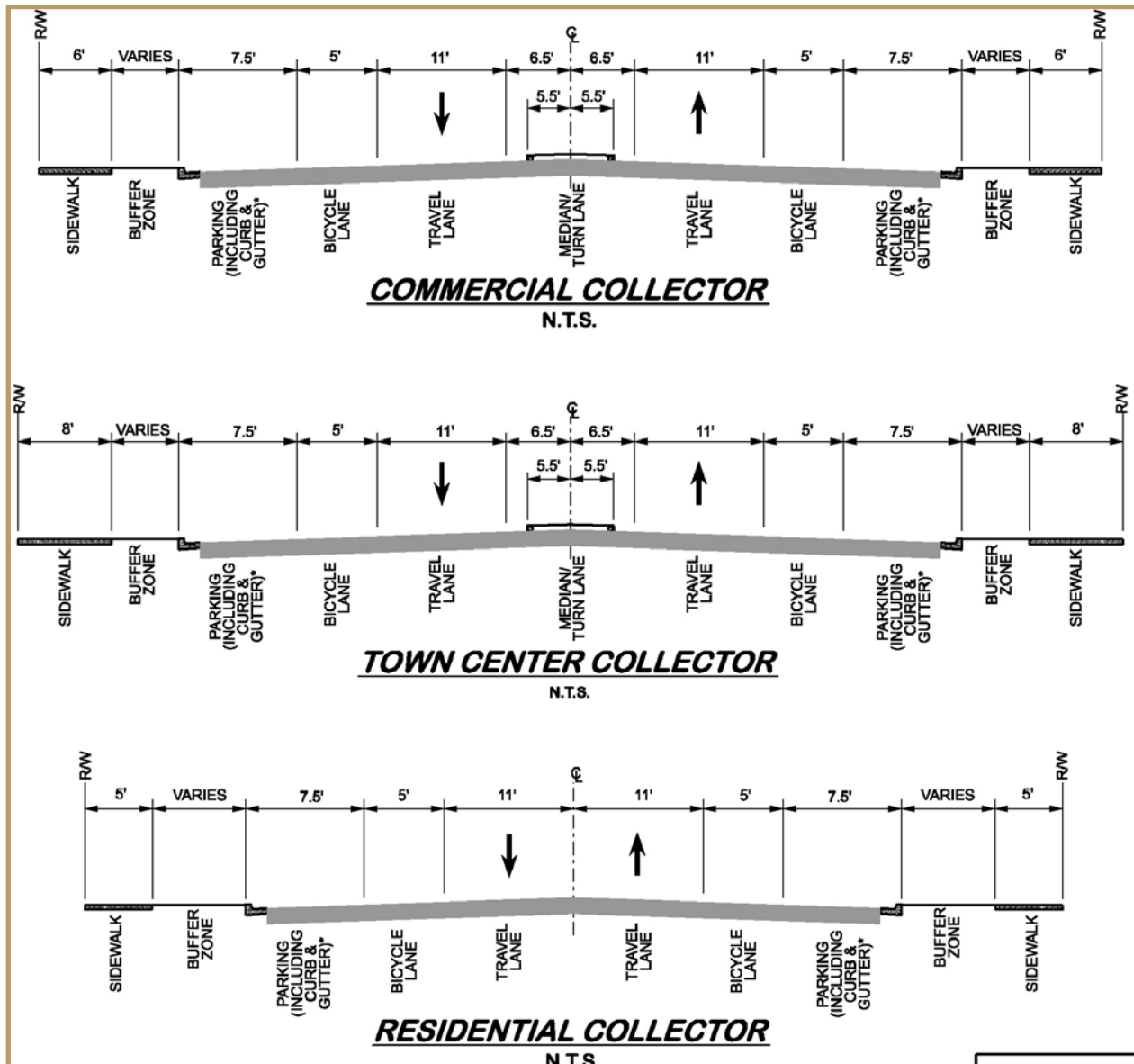


Figure 9. Collector Cross Sections



South Bonito Way-Commercial Collector

Sidewalk widths for collector streets vary from 8-feet to 5-feet based on typology. As collectors are normally not built by ACHD, coordination and cooperation with ACHD Development Review and the City of Meridian is necessary to ensure they meet standards and are consistent with the City’s plans as they are designed. Commercial and Town Center Collectors provide wider sidewalks as they are located in commercial and mixed-use areas that will have higher pedestrian traffic. They also include non-traversable raised medians as an access management tool. Adequate

width for bicycle use is provided and should be marked with an 8-inch line to separate the bicycle lane from the roadway. Bicycle lanes should be continuous between intersections.

### Local Roads

Local roads are not investigated or recommended in this Plan. Cross sections proposed for local roads should be designed based on the recommendations in the draft *Livable Street Design Guide* depending on their function within proposed developments.

### Typical Planning Level Intersections

The ACHD *Intersection Planning Level Standards* were used to determine signalized intersection improvements for the South Meridian Transportation Plan. Planning level roundabout intersections were developed consistent with the design guidelines developed by ACHD’s draft *Ada County Roundabout Study: Roundabout Application Guidelines for Ada County*. Roundabout designs may be used on all collectors and local roads and may be an

acceptable intersection control alternative to traffic signals at intersections along Residential and Planned Commercial Arterials if analyzed and recommended by an engineering study. Concept drawings of single and dual lane roundabouts are presented in **Figures 10 and 11**.

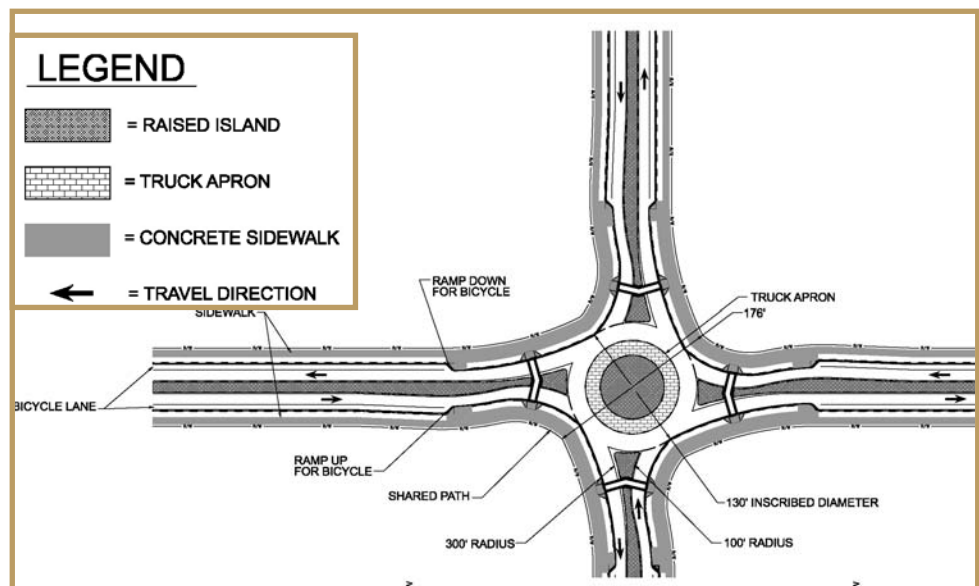


Figure 10. Single Lane Roundabout Concept

The maximum inscribed diameter for a single lane roundabout should be 130-feet while diameter for a dual lane roundabout should be 180-feet. The approaching roadways should be designed to provide adequate deflection so that entering traffic will slow down to recommended speeds (15-20 mph) before entering the roundabout. Bicycle lanes on the approaching roadways should be terminated approximately 100-feet upstream of the yield line and ramps provided from the bicycle lane to the sidewalk. Bicyclists may travel through the single lane roundabout as a vehicle due to the low vehicle speeds or use the sidewalk and crosswalks as a pedestrian. For dual lane roundabouts it is recommended that bicyclists follow the ramps and use the sidewalks. This does not prohibit bicyclists from using the roundabout as a vehicle if the cyclists are experienced in navigating them. The sidewalks between the bicycle ramps around the roundabout should be 10-feet wide to serve as a shared pathway for pedestrians and bikes and to be in compliance with the Americans with Disabilities Act.

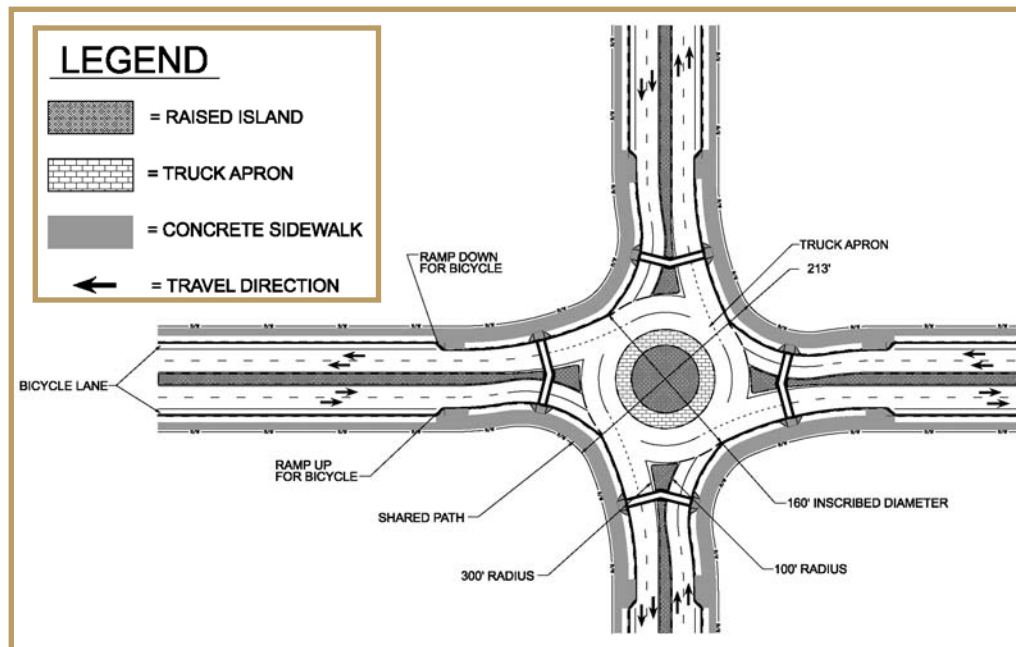


Figure 11. Dual Lane Roundabout Concept

## Pedestrian and Bicycle Travel Plan

High-density residential and large employment/retail centers proposed near the Meridian Road (State Highway 69) intersections with Amity Road and with Lake Hazel Road as well as the Locust Grove Road and Eagle Road intersections with Lake Hazel Road will create many walking and biking opportunities between home, work, and shopping. These areas, along with commercial and retail development, are focused along the major transportation arterials and will promote pedestrian and bicycle use because of the proximity of residences to shopping and working opportunities.

Pedestrian and bicycle usage will also be relatively large from residential areas to the proposed schools in the South Meridian Area. Many of these trips may use the shared pathways proposed to travel along canals, but the majority of them are expected to travel on the sidewalks and bicycle lanes that are part of the proposed arterial and collectors. The off-street pathways will be more recreational in nature but will also help provide access and routes for alternate modes of transportation.



**Bicycle and pedestrian facilities along roadway**

### Existing Facilities

There are relatively few existing pedestrian facilities in the South Meridian Area. There are sidewalks along both sides of the 5-lane section of Overland Road from Linder Road to east of Eagle Road and along arterial roadways where new development has provided them. The signalized intersections in the South Meridian Area all include pedestrian crosswalks and pedestrian signal phases.

There are two school crossings in the South Meridian Area. The first is at Mary McPherson Elementary on Amity Road between Meridian Road and Locust Grove Road. It has advance pedestrian crossing signs and flashers to define the 20 mph school speed limit zone and a marked crosswalk with pedestrian crossing warning signs directly in front of the school. There are no sidewalks along Amity Road leading to the school crossing.

The second school crossing is on Locust Grove Road south of Overland Road and is for students walking to Mountain View High School. This crossing also has advanced pedestrian crossing signs and flashers that define the 20 mph school speed limit zone and a marked crosswalk with pedestrian crossing warning signs across Locust Grove Road. Mountain View High School is located on Millennium Way, a collector that intersects Overland Road between Locust Grove

Road and Eagle Road. There are sidewalks along both sides of Overland Road and Millennium Way leading to the high school.

There are several pathways in the South Meridian Area that are shared facilities for both pedestrians and bicyclists. Most of them have been developed as part of residential communities and City of Meridian parks. These partially completed pathways will eventually provide connections to Boise, Nampa, Eagle, and Kuna. Portions of existing pathways include: Bud Porter Memorial Pathway (part of Five Mile Creek Pathway), the Meridian Loop, the Ridenbaugh Canal Pathway, the Ten Mile Creek Pathway, and others.

There are several designated bicycle facilities currently in the South Meridian Area, including:

- A signed shared bikeway along Meridian Road (State Highway 69) from Overland Road to Kuna Road
- A bike lane along Overland Road from Linder Road to Eagle Road
- A bike lane along Locust Grove Road from Overland Road to Fairview Avenue

## South Meridian Transportation Plan Recommendations

### Roadway Bicycle and Pedestrian Facilities

All improved arterials and collectors identified in the South Meridian Transportation Plan will include dedicated bicycle lanes and sidewalks. Recommended roadway pedestrian and bicycle facilities are depicted in **Figure 12**. Refer to the planning level cross sections for pedestrian and bicycle components of each roadway type. Some rural cross sections may include wide shoulders to accommodate bicyclists and pedestrians until the ultimate improvements are constructed.

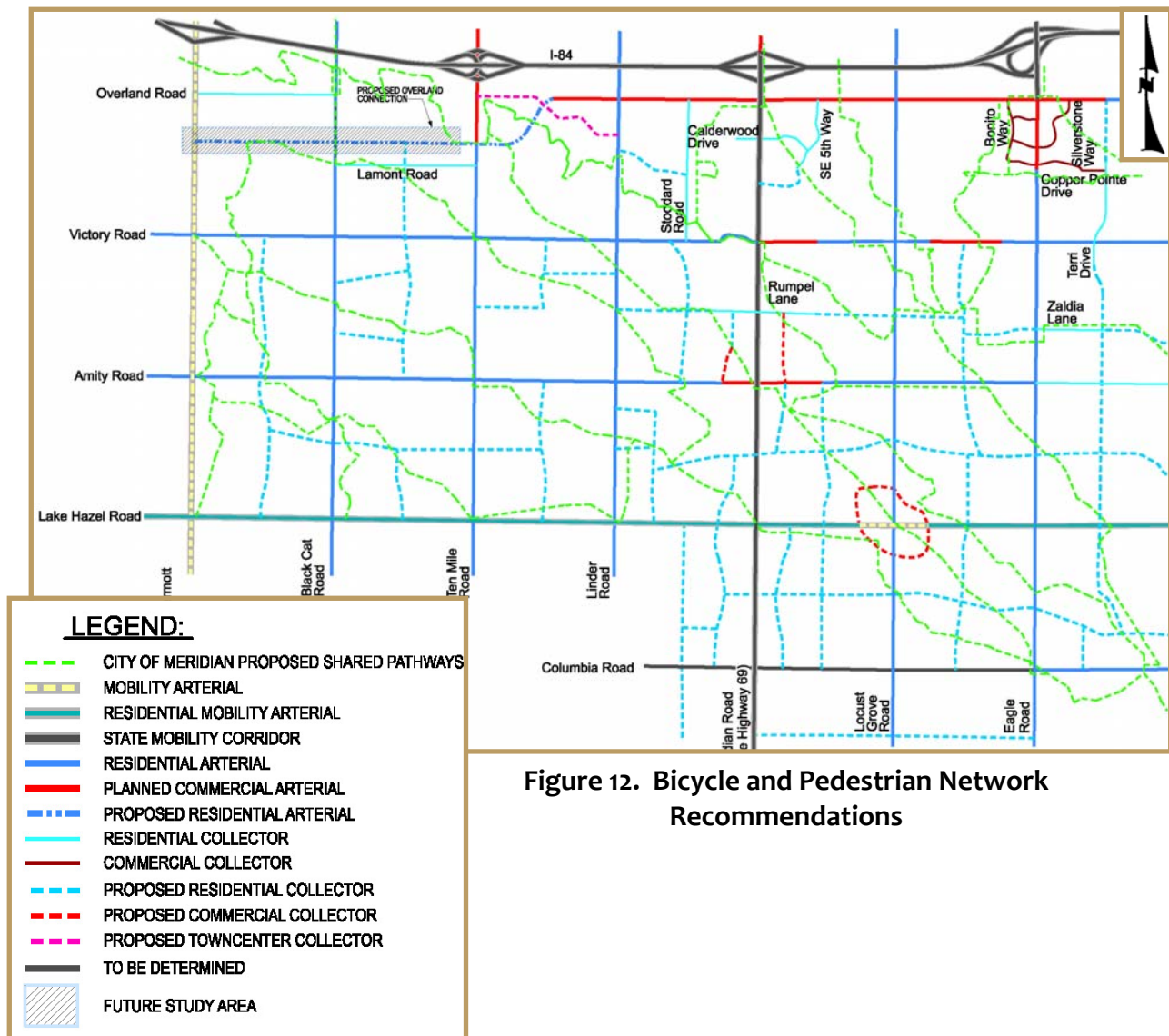


Figure 12. Bicycle and Pedestrian Network Recommendations

Future intersection widening and signalizations recommended for several intersections will include pedestrian crosswalks and pedestrian signal phases. Proposed roundabouts will require pedestrian bicycle facilities as described in the conceptual roundabout design descriptions, including:

- Bicycle lanes on the approaching roadways terminated approximately 100-feet upstream of the yield line
- Ramps from the bicycle lane to the sidewalk
- Sidewalks between the bicycle ramps around the roundabout should be 10-feet wide to serve as a shared pathway



Example of bicycle ramp at roundabout approach

ACHD regularly installs sidewalks and bicycle facilities as part of new projects but there are many gaps between facilities in the pedestrian-bicycle system. Until roadways are reconstructed to provide pedestrian and bicycle facilities, the ACHD draft *Roadways to Bikeways Plan* recommends eliminating these gaps with several short-term, mid-term, and long-term network projects. These projects are presented in Map 21 in the appendix of the draft *Roadways to Bikeways Plan*.

Recommended short-term bicycle projects in the draft *Roadways to Bikeways Plan* will provide signed shared bikeways on several existing collectors between Meridian Road (State Highway 69) and Cloverdale Road south of Overland Road. Recommended mid-term projects draft *Roadways to Bikeways Plan* includes adding bike lanes along several arterials, including:

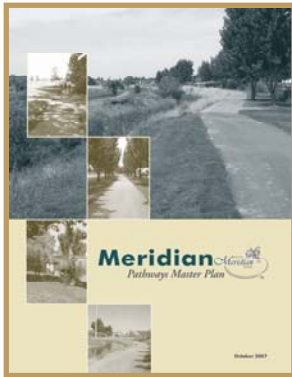
- Overland Road from Ten Mile Road to Linder Road
- Victory Road from Meridian Road (State Highway 69) to the existing bike lane that begins at Cole Road
- Amity Road from Meridian Road (State Highway 69) to the existing bike lane that begins west of Cole Road
- Lake Hazel Road from Meridian Road (State Highway 69) to Maple Grove Road
- Ten Mile Road from Overland Road to Ustick Road
- Linder Road throughout Ada County
- Locust Grove Road from the existing bike lanes north of Overland Road to Amity Road

These proposed mid-term projects in the South Meridian Area are consistent with the recommended roadway improvements for these arterials.



## Off-Street Pathways

The City of Meridian's *Pathways Master Plan* focuses largely on off-street pathways throughout the city, including the South Meridian Area. The off-street pathways include canal, residential, rail-with-trail, and micro-paved pathways that are available for use by pedestrians, bicyclists, skaters, wheelchair users, joggers, and other non-motorized users. These pathways are depicted in **Figure 17** and are recommended for implementation. All off-street pathways improvements should be coordinated with the adjacent roadway improvements so that the appropriate pedestrian and bike crosswalks can be connected to the pathways.



The *Pathways Master Plan* includes a number of on-street connections identified as key links between pathways and recreational facilities. These connections, between origins and destinations, are the responsibility of ACHD and were identified on Ada County and ACHD plans as existing or proposed bicycle and pedestrian facilities. City of Meridian staff made revisions to their proposed pathway network to route all pathway crossings of arterial roadways to the nearest existing or future full access intersection, where practical, based on a recommendation from this Plan. Pedestrian and bicycle crossings of arterials at controlled intersections is necessary because of their proposed width and high traffic volumes. Coordination between the City of Meridian and ACHD will be necessary to ensure that pathway crossings are routed to the correct intersections as they are designed and constructed.

## Future School Crossings

The proposed land use in the South Meridian Comprehensive Plan Amendment, adopted in March 2008, identifies potential future locations for schools. There is the potential for six new high schools, twelve new middle schools, and twenty four new elementary schools based on the Meridian Joint School District No. 2's planning thresholds of one elementary school every square mile, one middle school every 2-2.5 square miles, and one high school every 3-4 square miles. The proposed school locations are flexible and may change as planning and development continues.

Each school is required to develop a plan for providing pedestrian and bicycle access for their students as well as specific designs of the facilities and features needed. Future pedestrian and bicycle improvements should be coordinated and implemented as part of the planning process for each school.

## Improvements Plan

An interim year capacity analysis was conducted to approximately determine when improvements may be needed between 2010 and 2030. The Plan is based on the assumption that the South Meridian growth scenario modeled will fully develop by the year 2030. A linear extrapolation from the current year volumes to the design year forecast was prepared to estimate travel demand forecasts for each interim design year, namely 2010, 2015, 2020, and 2025. If an intersection or roadway segment failed in an interim design period, the improvements needed for the 2030 design year are recommended for implementation. Stages of construction for intersections were not investigated or recommended (e.g. constructing a single lane roundabout first initially and then reconstructing it as a dual lane roundabout ultimately). These types of detailed project stages will be developed during detailed design and through the FYWP/CIP process.

The recommended roadway improvements plan is depicted in **Figure 13**. A color code shows when the 2030 build out intersections and roadway segment improvements are recommended based on current conditions and growth assumptions.

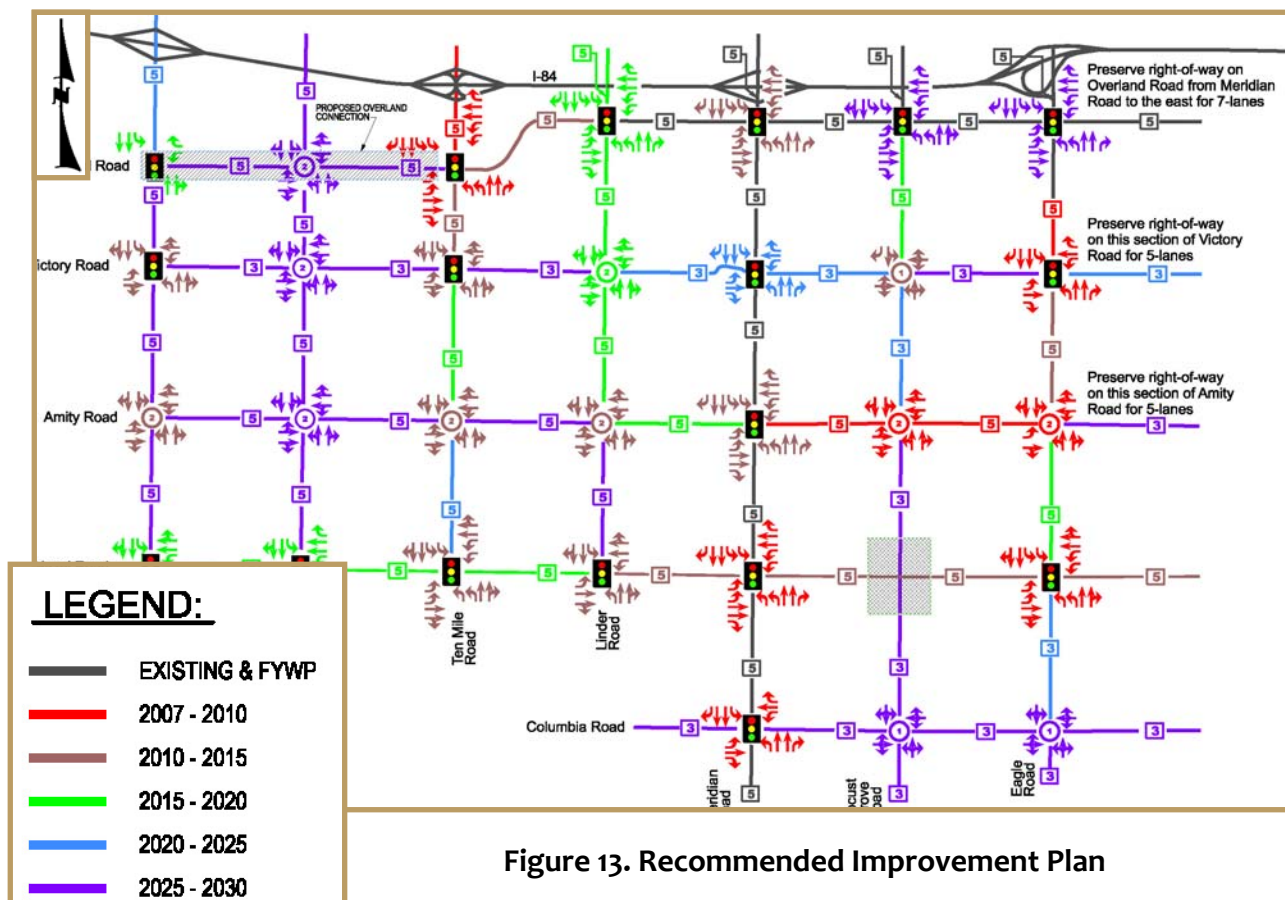


Figure 13. Recommended Improvement Plan

Generally, intersection improvements are required before roadway segment improvements. Spreadsheets detailing the interim year capacity analysis and listing all of the proposed improvements are found in **Appendix F**.

This plan does not dictate when specific projects and improvements will take place; it is included simply as an additional tool to guide ACHD in prioritizing projects in future editions of the FYWP and the CIP. It is based on several assumptions, particularly the location and pace of development. Adjustments should be made as development occurs so that improvements are provided as they become needed.

Some changes are anticipated as the City of Kuna updates their comprehensive plan. If the North Kuna area develops with more density than currently planned, some arterial roadways could require improvements sooner than the Recommended Improvements Plan presents. Ten Mile Road is a good example of this as the southern segments of Ten Mile Road from Lake Hazel Road to Victory Road do not show improvements needed until 2015 and 2020. However, if travel demand from the south wanting to access the new Ten Mile interchange grows more quickly, these improvements will be needed sooner.

The east-west arterial segment improvements from Eagle Road to Cloverdale Road where the City of Meridian and the City of Boise planning areas abut should be coordinated with the *Southwest Boise Transportation Study* recommendations. Some of these are shown to need improvement sooner than the Southwest Boise improvement plans show at this time.

## **Responsibility for Providing Improvements**

Several of the arterial roadway and intersection improvements identified in this Plan are not included in the adopted FYWP or CIP. If an arterial improvement identified in this Plan is not planned for in the adopted CIP but is required due to the timing of development, options exist for implementation. For arterials or intersections, if an improvement is required prior to being programmed in ACHD's FYWP or CIP, developers will be required to dedicate the ultimate right-of-way and may be required to construct the improvement. Compensation for any eligible system improvements will be subject to a development agreement between ACHD and the developer. Collector roadways will require the right-of-way to be dedicated to ACHD and will be built with the developments.

## **Benefit/Cost Analysis**

Benefit/Cost ratios were developed to prioritize the intersection improvements and the results are presented for each intersection based on their interim design period and estimated costs developed in the Needs Cost Estimate section of this report. The intersections that have a benefit/cost ratio less than 1.0 and they may realize benefits beyond the interim design year are

shown in **red** and roundabout intersections are shown in **blue**. Benefit/cost analysis methodology and assumptions are described in **Appendix E** and tables calculating the present worth of these intersections are presented in **Appendix I**.

The intersections with higher forecast demand generally show higher B/C ratios because more users equate to more overall delay savings, even when individual vehicle delay reductions are small. Roundabouts tend to show higher B/C ratios because, while they serve lower traffic volumes overall, they reduce delay per vehicle more dramatically than signalized improvements in most cases.

## 2010

Seven intersections need improvements by 2010. Based on the benefit/cost analysis for the period, the intersections recommended for improvement are prioritized as follows:

1. Columbia Road / Meridian Road, B/C = 4.0
2. Lake Hazel Road / Meridian Road, B/C = 2.4
3. Amity Road / Eagle Road, B/C = 1.9
4. Victory Road / Eagle Road, B/C = 1.6
5. Lake Hazel Road / Eagle Road, B/C = 1.5
6. Amity Road / Locust Grove Road, B/C = 1.3
7. **Overland Road / Ten Mile Road, B/C = 0.8**

## 2010-2015

Ten intersections need improvements between 2010 and 2015. Based on the benefit/cost analysis for the period, the intersections recommended for improvement are prioritized as follows:

1. Overland Road / Meridian Road, B/C = 14.3
2. **Amity Road / Ten Mile Road, B/C = 2.8**
3. Amity Road / Meridian Road, B/C = 2.3
4. **Amity Road / Linder Road, B/C = 1.8**
5. Victory Road / Ten Mile Road, B/C = 1.5
6. **Amity Road / McDermott Road, B/C = 1.3**
7. Lake Hazel Road / Linder Road, B/C = 1.3
8. **Victory Road / Locust Grove Road, B/C = 1.2**
9. Lake Hazel Road / Ten Mile Road, B/C = 1.2
10. **Victory Road / McDermott Road, B/C = 0.6**

The B/C ratio for the Overland Road / Meridian Road intersection is so large because the improvements are very minor. A right turn lane must be added and the signal modified to provide the recommended improvement. However, this intersection is forecast to operate at LOS F with the 2030 forecast peak hour demand.

### 2015-2020

Five intersections require improvements between 2015 and 2020. Based on the benefit/cost analysis for the period, the intersections recommended for improvement are prioritized as follows:

1. Victory Road / Linder Road, B/C = 1.6
2. Overland Road / McDermott Road, B/C = 1.1
3. Overland Road / Linder Road, B/C = 1.1
4. Lake Hazel Road / McDermott Road, B/C = 1.1
5. Lake Hazel Road / Black Cat Road, B/C = 1.1

### 2020-2025

One intersection requires improvement between 2020 and 2025.

1. Victory Road / Meridian Road, B/C = 0.8

## Cost Estimate

Right-of-way and construction cost estimates are presented in 2008 dollars, are conceptual, and assume no contributing funds from other sources. Only totals are presented in the report and detailed tables presenting cost calculations are presented in **Appendix I**.

### Right-of-Way Cost Estimate

The right-of-way estimates and cost approximations are for planning purposes and comparisons only. Those recommended improvement projects included in the CIP will include the necessary right-of-way purchased by ACHD. Recommended improvements not included in the CIP will require adjacent developments to dedicate the necessary right-of-way. Specific right-of-way needs and costs will be determined during design activities.

Unit costs for right-of-way were provided by Integrity Appraisal, which performed a market analysis of land and home sales conducted in the South Meridian Area in a report titled *South Meridian Transportation Plan Estimate of Right of Way Acquisition Costs*. They compiled sales in the area since 2001 to develop a current average cost per acre at each arterial/arterial intersection in the area. These costs were applied to the estimated intersection and roadway segment right-of-way needs to determine the associated costs. A copy of this report is found in **Appendix K**.

Integrity Appraisal was contacted to determine what effect the recent turmoil in the real estate market would have on the estimated acreage values prepared for the original report. They felt that those values were based on a rapidly rising trend of real estate values rising over time and the values estimated in the original report are a conservative estimate of the right-of-way costs. They are therefore maintained for the present worth of the right-of-way needed.

The right-of-way need and costs include:

- 75.14 acres estimated at \$5,625,000 for recommended intersection improvements
- 141.86 acres estimated at \$8,945,000 for recommended roadway improvements
- 217.00 total acres for a total cost of \$14,570,000

### Construction Cost Estimate

ACHD provided roadway costs from various roadway projects based on recent construction project contracts and other planning activities. The estimated costs were compared with actual costs and the results formed the basis for the unit costs used in the South Meridian Transportation Plan. They provide a planning level estimate of current construction costs without breaking out individual bid items, material quantities, utility costs, and other unique construction impacts.

The estimated additional cost for intersections controlled by roundabouts was included at \$180,000 for single lane roundabouts and \$443,000 for dual lane roundabouts. An estimated traffic signal cost of \$250,000 was included for those intersections requiring traffic signal control. These estimated intersection control costs were determined from completed projects.

The construction cost estimate includes:

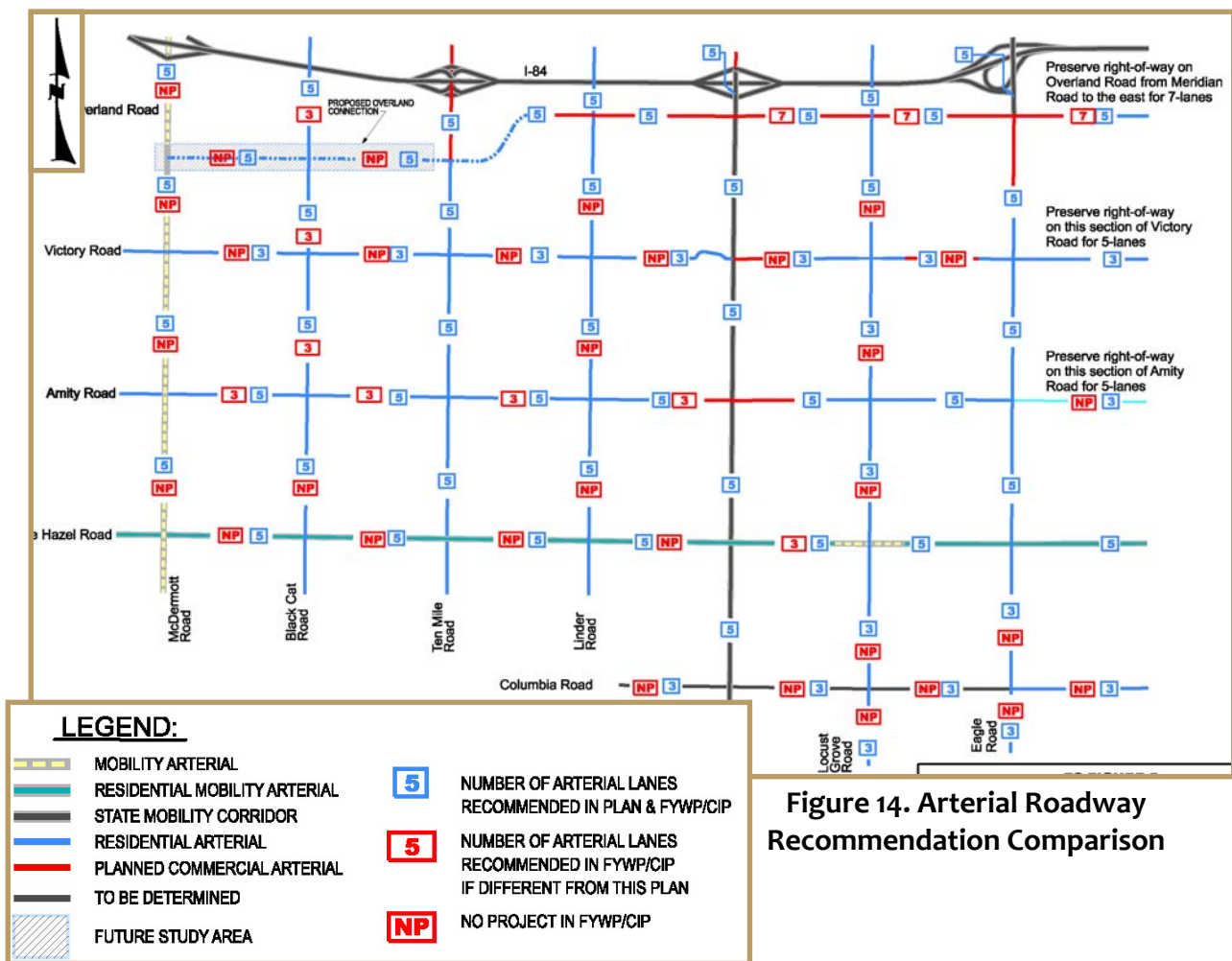
- \$77,217,000 for recommended intersection improvements
- \$142,279,000 for recommended roadway improvements
- \$219,496,000 total cost

### **Total Planning Level Cost Estimate**

The total estimated intersection and roadway segment right-of-way and construction cost for the recommended improvements is \$234,066,000.

## Comparison with Existing Capital Plans

A comparison of this Plan’s roadway recommendations and the FYWP and CIP recommendations is found in **Figure 14**. The number of lanes recommended for each arterial segment in this Plan is shown in **blue**. If the FYWP/CIP number of lanes recommended for each arterial segment is different, they are shown in **red** next to this Plan’s recommendations. If there is no project in the FYWP/CIP a red **NP** is shown next to this Plan’s recommendations. If the FYWP/CIP number of lanes recommended for each arterial segment is the same, no red symbol is shown.



**Figure 14. Arterial Roadway Recommendation Comparison**

The recommendations and cost estimates between this Plan’s roadway recommendations and the FYWP and CIP recommendations differ because of underlying differences in land use assumptions and build out time frames.

- The CIP represents a view of 20 years
- The South Meridian Transportation Plan represents a view out to 2030

- Growth levels and land-use information represents build-out that could take longer than the 20 years or beyond 2030
- Corridor preservation will be required as development occurs and the level of development may need review of appropriate funding mechanisms are not achieved.
- The South Meridian Transportations Plan's travel demand forecasts are based on the City of Meridian's specific land use growth scenario the vary from the *Communities in Motion* scenario used in the CIP

Based on current economic conditions, build-out may not be completed by the 2030 planning horizon. If there is a difference between improvements or right-of-way required by the CIP or this Plan, whichever has the greater requirements will be followed.

**Figure 15** on the presents a comparison of this Plan's arterial roadway recommendations and the FYWP and CIP recommendations as well as the estimated costs associated with each. **Figure 16** presents a comparison of this Plan's intersection recommendations and the FYWP and CIP recommendations as well as the estimated costs associated with each. When the recommendations differ they are highlighted in the figure and whichever requirement is greater will be required.

The figures outline the differences in the ultimate configuration of the arterial intersections and roadways in this Plan and current ACHD planning documents. The differences at many locations are not significant; however, several intersections and roadway segments are not currently planned for improvements in ACHD's current plans while they do require improvements in this Plan. This accounts for some of the cost differences in the comparison. The estimated cost for this Plan's recommended intersection improvements is more than double that of ACHD's plans (\$82,842,000 versus \$35,928,000). The roadway need costs are much closer with this Plan recommending \$151,224,000 in cost versus ACHD's plans recommending \$121,977,000.

Costs totaled for the South Meridian Area in the CIP came to \$157,905,000. The additional cost needed to implement the recommendations of the Plan is approximately \$76,161,000. This estimate is subject to change depending on the cost of construction materials, right-of-way, and the rate of inflation. Some of the additional costs may be offset through public-private partnerships with land developers.

**Figure 15. Arterial Roadway Recommendation Comparison and Costs**

East-West Arterials					
Roadway Description		South Meridian Transportation Plan Recommendations		ACHD Five Year Work Program and Draft Capital Improvements Plan	
Road	Location	Recommended Lanes	Total Estimated Cost	Recommend Lanes	Total Estimated Cost
Overland Road	E/O McDermott	5	\$3,923,000	No Project	
Overland Road	E/O Black Cat	5	\$3,082,000	No Project	
Overland Road	E/O Ten Mile	5	\$2,768,000	5	\$4,140,000
Overland Road	E/O Linder	No Project		No Project	
Overland Road	E/O Meridian Road	No Project		7	\$8,580,000
Overland Road	E/O Locust Grove	No Project		7	\$10,080,000
Overland Road	E/O Eagle	No Project		7	\$8,770,000
Victory Road	E/O McDermott	3	\$2,411,000	No Project	
Victory Road	E/O Black Cat	3	\$2,424,000	No Project	
Victory Road	E/O Ten Mile	3	\$2,436,000	No Project	
Victory Road	E/O Linder	3	\$2,684,000	No Project	
Victory Road	E/O Meridian Road	3	\$2,641,000	No Project	
Victory Road	E/O Locust Grove	3	\$2,615,000	No Project	
Victory Road	E/O Eagle	3	\$2,024,000	3	\$4,550,000
Amity Road	E/O McDermott	5	\$4,153,000	3	\$5,500,000
Amity Road	E/O Black Cat	5	\$4,153,000	3	\$3,850,000
Amity Road	E/O Ten Mile	5	\$4,227,000	3	\$4,200,000
Amity Road	E/O Linder	5	\$3,828,000	3	\$4,701,000
Amity Road	E/O Meridian Road	5	\$3,192,000	5	\$4,740,000
Amity Road	E/O Locust Grove	5	\$3,933,000	5	\$4,050,000
Amity Road	E/O Eagle Road	5	\$2,954,000	No Project	
Lake Hazel Road	E/O McDermott	5	\$3,042,000	No Project	
Lake Hazel Road	E/O Black Cat	5	\$3,256,000	No Project	
Lake Hazel Road	E/O Ten Mile	5	\$3,438,000	No Project	
Lake Hazel Road	E/O Linder	5	\$3,261,000	No Project	
Lake Hazel Road	E/O Meridian Road	5	\$3,019,000	3	\$4,730,000
Lake Hazel Road	E/O Locust Grove	5	\$3,337,000	5	\$5,600,000
Lake Hazel Road	E/O Eagle	5	\$3,057,000	5	\$3,810,000
Columbia Road	E/O Linder	3	\$1,068,000	No Project	
Columbia Road	E/O Meridian Road	3	\$2,312,000	No Project	
Columbia Road	E/O Locust Grove	3	\$2,764,000	No Project	
Columbia Road	E/O Eagle	3	\$2,106,000	No Project	
North-South Arterials					
Roadway Description		South Meridian Transportation Plan Recommendations		ACHD Five Year Work Program and Draft Capital Improvements Plan	
Road	Location	Recommended Lanes	Total Estimated Cost	Recommend Lanes	Total Estimated Cost
McDermott Road	N/O Overland	5	\$2,598,000	No Project	
McDermott Road	N/O Victory	5	\$2,141,000	No Project	
McDermott Road	N/O Amity	5	\$3,715,000	No Project	
McDermott Road	N/O Lake Hazel	5	\$3,742,000	No Project	
Black Cat Road	N/O Overland	3	\$1,232,000	3	\$5,070,000
Black Cat Road	N/O Victory	3	\$1,950,000	3	\$4,380,000
Black Cat Road	N/O Amity	3	\$2,731,000	3	\$4,580,000
Black Cat Road	N/O Lake Hazel	3	\$2,454,000	No Project	
Ten Mile Road	N/O Overland	5	\$0	5	\$3,110,000
Ten Mile Road	N/O Victory	5	\$2,189,000	5	\$5,530,000
Ten Mile Road	N/O Amity	5	\$3,746,000	5	\$6,310,000
Ten Mile Road	N/O Lake Hazel	5	\$3,915,000	5	\$5,950,000
Linder Road	N/O Overland	5	\$169,000	5	\$4,110,000
Linder Road	N/O Victory	5	\$3,701,000	No Project	
Linder Road	N/O Amity	5	\$4,345,000	No Project	
Linder Road	N/O Lake Hazel	5	\$3,741,000	No Project	
Meridian Road (SH 69)	N/O Overland	No Project		No Project	
Meridian Road (SH 69)	N/O Victory	No Project		No Project	
Meridian Road (SH 69)	N/O Amity	No Project		No Project	
Meridian Road (SH 69)	N/O Lake Hazel	No Project		No Project	
Meridian Road (SH 69)	N/O Columbia	No Project		No Project	
Meridian Road (SH 69)	S/O Columbia	No Project		No Project	
Locust Grove Road	N/O Overland	No Project		No Project	
Locust Grove Road	N/O Victory	5	\$3,601,000	No Project	
Locust Grove Road	N/O Amity	3	\$2,344,000	No Project	
Locust Grove Road	N/O Lake Hazel	3	\$2,354,000	No Project	
Locust Grove Road	N/O Columbia	3	\$2,471,000	No Project	
Locust Grove Road	S/O Columbia	3	\$1,519,000	No Project	
Eagle Road	N/O Overland	No Project		No Project	
Eagle Road	S/O Overland for 1/2 mil	No Project		No Project	
Eagle Road	N/O Victory for 1/2 mile	5	\$1,800,000	5	\$1,373,000
Eagle Road	N/O Amity	5	\$3,159,000	5	\$463,000
Eagle Road	N/O Lake Hazel	5	\$3,724,000	5	\$3,800,000
Eagle Road	N/O Columbia	3	\$2,515,000	No Project	
Eagle Road	S/O Columbia	3	\$1,260,000	No Project	
<b>Total Roadway Cost</b>			<b>\$151,224,000</b>	<b>Total Roadway Cost</b>	<b>\$121,977,000</b>

Figure 16. Arterial Intersection Recommendation Comparison and Costs

Intersection	South Meridian Transportation Plan Lane Needs by Leg					ACHD FYWP and CIP Lane Needs by Leg					Total Estimated Cost	
	North Leg	South Leg	West Leg	East Leg	Project Description	Estimated Cost	North Leg	South Leg	West Leg	East Leg		Project Description
Overland Road and McDermott Road	5	5	0	5	Widen as shown, add signal	\$2,967,000					No Project	
Overland Road and Black Cat Road	3	3	5	5	Dual lane roundabout	\$2,029,000					No Project	
Overland Road and Ten Mile Road	7	7	7	7	Widen as shown, add signal	\$6,085,000	5	6	x	4	Widen as shown, add signal	\$4,330,000
Overland Road and Linder Road	7	7	7	7	Widen as shown, add signal	\$4,862,000	6	6	6	7	Widen as shown, add signal	\$100,000
Overland Road and Meridian Road	7	7	7	7	Widen, modify signal	\$326,000					No Project	
Overland Road and Locust Grove Road	6	6	7	7	Widen, modify signal	\$322,000					No Project	
Overland Road and Eagle Road	7	7	7	7	Widen, modify signal	\$1,194,000					No Project	
Victory Road and McDermott Road	5	5	3	3	Widen as shown, add signal	\$3,043,000					No Project	
Victory Road and Black Cat Road	3	3	3	3	Single lane roundabout	\$1,439,000	3	3	3	3	Widen as shown, add signal	\$1,220,000
Victory Road and Ten Mile Road	5	5	3	3	Widen as shown, add signal	\$3,089,000	5	5	3	3	Widen as shown, add signal	\$3,270,000
Victory Road and Linder Road	5	5	5	5	Dual lane roundabout	\$2,363,000					No Project	
Victory Road and Meridian Road	9	9	4	4	Widen as shown, add signal	\$964,000					No Project	
Victory Road and Locust Grove Road	3	3	3	3	Single lane roundabout	\$1,683,000					Signal improvement	\$2,150,000
Victory Road and Eagle Road	6	6	4	4	Widen as shown, add signal	\$3,408,000	5	5	5	5	Widen as shown, add signal	\$2,220,000
Amity Road and McDermott Road	5	5	5	5	Dual lane roundabout	\$1,887,000					No Project	
Amity Road and Black Cat Road	5	5	5	5	Dual lane roundabout	\$1,727,000	3	3	3	3	Widen as shown, add signal	\$1,190,000
Amity Road and Ten Mile Road	5	5	5	5	Dual lane roundabout	\$1,876,000	5	5	5	5	Dual lane roundabout	\$1,720,000
Amity Road and Linder Road	5	5	5	5	Dual lane roundabout	\$1,925,000	4	3	3	3	Widen as shown, add signal	\$1,250,000
Amity Road and Meridian Road	7	7	7	7	Widen as shown, add signal	\$4,638,000					No Project	
Amity Road and Locust Grove Road	5	5	5	5	Dual lane roundabout	\$2,103,000	4	3	5	6	Widen as shown, add signal	\$2,810,000
Amity Road and Eagle Road	5	5	5	5	Dual lane roundabout	\$2,004,000	6	5	5	4	Widen as shown, add signal	\$3,600,000
Lake Hazel Road and McDermott Road	5	5	5	5	Widen as shown, add signal	\$3,598,000					No Project	
Lake Hazel Road and Black Cat Road	4	4	6	6	Widen as shown, add signal	\$3,413,000					No Project	
Lake Hazel Road and Ten Mile Road	6	6	6	6	Widen as shown, add signal	\$4,137,000	4	3	3	3	Widen as shown, add signal	\$2,160,000
Lake Hazze Road and Linder Road	6	6	6	6	Widen as shown, add signal	\$3,625,000					No Project	
Lake Hazel Road and Meridian Road	7	7	7	7	Widen as shown, add signal	\$4,812,000	5	5	5	6	Widen as shown, add signal	\$3,750,000
Lake Hazel Road and Locust Grove Road	4	4	6	6	Widen as shown, add signal	\$3,970,000	4	4	5	5	Widen as shown, add signal	\$1,930,000
Lake Hazel Road and Eagle Road	6	6	6	6	Widen as shown, add signal	\$4,460,000	5	4	5	5	Widen as shown, add signal	\$3,360,000
Columbia Road and Meridian Road	6	6	4	4	Widen as shown, add signal	\$2,140,000	5	5	4	4	Widen as shown, add signal	\$868,000
Columbia Road and Locust Grove Road	3	3	3	3	Single lane roundabout	\$1,508,000					No Project	
Columbia Road and Eagle Road	3	3	3	3	Single lane roundabout	\$1,547,000					No Project	
<b>Total Intersections Cost</b>						<b>\$52,842,000</b>						<b>\$35,928,000</b>

## Access Management Plan

Proper access management will maintain the mobility of the travelers on arterials while providing sufficient and safe access to adjacent development as the land uses transition from rural to urban.

The creation and adoption of an access management plan provides many benefits to communities by maintaining good traffic flow and increasing public safety by reducing conflict points while providing access to development. The key to a successful program is to have regulatory power over access management before development occurs so standards will be in place and enforceable as applicants design their sites. Land use and access management are closely tied together. When they are not coordinated, access management standards may not be realistic to meet the needs of the development. For example, major arterials are generally best served by limiting access to key locations in a mile. This requires properties along the arterial to share driveways and develop frontage roads for access, which requires larger lots and greater setbacks from the arterial. If the lots along the arterial do not meet the setback and size needs, enforcement of the desired access management plan will become difficult. Arterials have regional importance and are intended to serve moderate to high volumes of traffic traveling relatively long distances at higher speeds. Direct lot access is restricted and cross access required.



Example of right-turn only access control

The South Meridian Access Management Plan was developed to provide restricted access on arterials to improve traffic flow and safety by limiting the number of public road and driveway approaches. Roadways that serve regional mobility place more emphasis on traffic flow than on local access and therefore have even stricter access control. Residential arterials and collectors provide connectivity from the regional roadways to smaller neighborhood commercial centers and residential development and may need more access points.

## Existing Access Management Policy and Standards

ACHD has existing access management standards for arterials and collectors under its jurisdiction in Section 7200 of the *ACHD Policy Manual*. These standards are currently being updated and will limit direct access on arterial roadways and require development to consolidate access points. The goals of this access management policy update are to extend the life of ACHD roadways, increase public safety, and reduce traffic congestion.

## Access Management Standards

Access Management standards for the South Meridian area were developed and applied to the street typology categories designated in ACHD’s *Livable Street Design Guide*. The Access Management Plan provides for collaboration between ACHD and the City of Meridian to ensure access restrictions along arterials in the South Meridian Area are appropriate for adjacent land uses while ensuring required mobility. The South Meridian Access Management Standards are outlined in **Figure 17**. All of the standards are based on the future urban/suburban character of this area and represent the minimum spacing between access points allowed along arterial roadways. The engineering concepts used as the basis for the access management standards are outlined in the **Appendix K**.

Figure 17. South Meridian Access Management Standards

Street Typology	Minimum Access Spacing Standards*			
	Minimum Signal Spacing	Full Access	Right-in/Right-out/Left-in Access	Right In/Right Out Access
<b>State Highways</b>	½ mile = 2,640-feet	½ mile = 2,640-feet		
<b>Mobility Arterials</b>	½ mile = 2,640-feet	½ mile = 2,640-feet	¼ mile = 1,320-feet	
<b>Residential Mobility Arterials</b>	½ mile = 2,640-feet	½ mile = 2,640-feet	¼ mile = 1,320-feet	⅛ mile = 660-feet
<b>Planned Commercial &amp; Residential Arterials</b>	½ mile = 2,640-feet	¼ mile = 1,320-feet		⅛ mile = 660-feet
<b>Town Center Collector</b>	Refer to current ACHD <i>Policy Manual</i>			
<b>Commercial Collector</b>				
<b>Residential Collector</b>				
<b>Local Road</b>				
*All standards are minimum distances. If access points are allowed, it must be justified by an approved Traffic Impact Study.				

Access to development is required from lesser classified streets when the development fronts more than one street. Access points shall be evaluated and considered for specific land uses through the development application process. If an access point is approved for an identified land use, that access point may be required to be relocated and/or restricted in the future if the land use intensifies or the property redevelops. The need for an access point must be demonstrated and justified in a traffic impact study before it will be allowed.

A good collector roadway network is critical to the implementation and success of an Access Management Plan. Collectors connect properties and local roads to arterial roadways, thus reducing the need for a large number of connections to arterial roadways. Specific collector design and intersection locations will be determined by ACHD, through consultation with the City of Meridian and in accordance with this Plan’s Access Management Plan as part of the development application process. Future development should design projects to access arterials using the collector network shown in **Figure 18**.

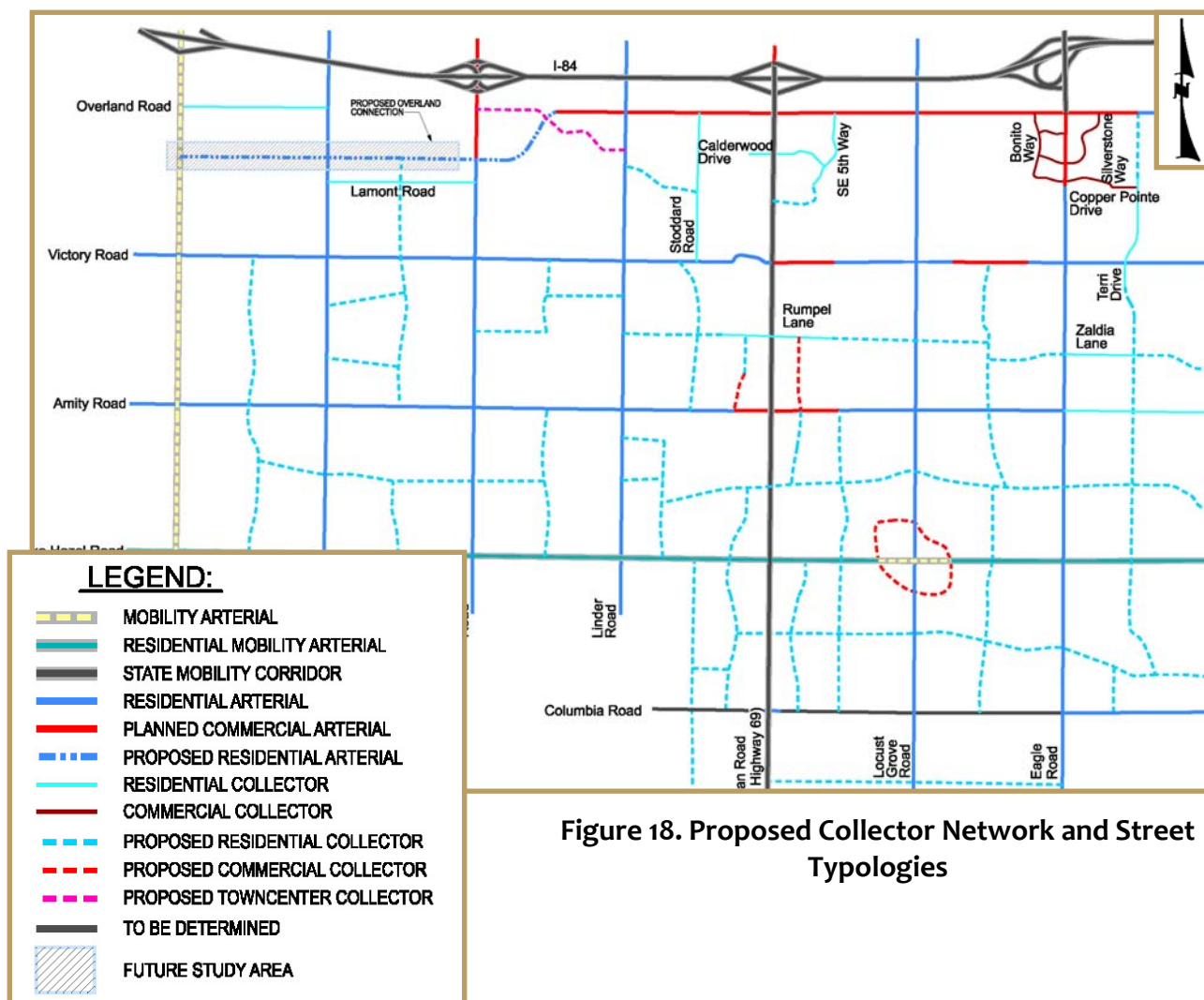


Figure 18. Proposed Collector Network and Street Typologies

Collectors will require right-of-way to be dedicated and will be built by development.

Medians are proposed for all arterials and specific design and usage of medians and openings should be determined in the design stage of each roadway. With proper justification, traffic signals may be allowed at up to ¼ mile spacing on Residential Mobility, Residential, and Planned Commercial Arterials. Roundabouts may be an acceptable intersection control alternative to traffic signals at intersections along Residential and Planned Commercial Arterials. Before a traffic signal or roundabout is recommended for a location an engineering study must be completed, including an evaluation of alternative mitigation measures and signal warrant analysis.

As stated above, the Access Management Plan Standards represent the minimum spacing between access points allowed along arterial roadways. If a development proposes an access point that does not meet the Plan standards, the developer may follow standard ACHD’s variance process (as outlined in the *ACHD Policy Manual*) to demonstrate the need for that access point. All access points will have to be justified and approved by ACHD on a case-by-case basis through an ACHD approved traffic impact study. The following illustrations are for example purposes only. **Figure 19** presents potential access standards for State Highways and Mobility Arterials.

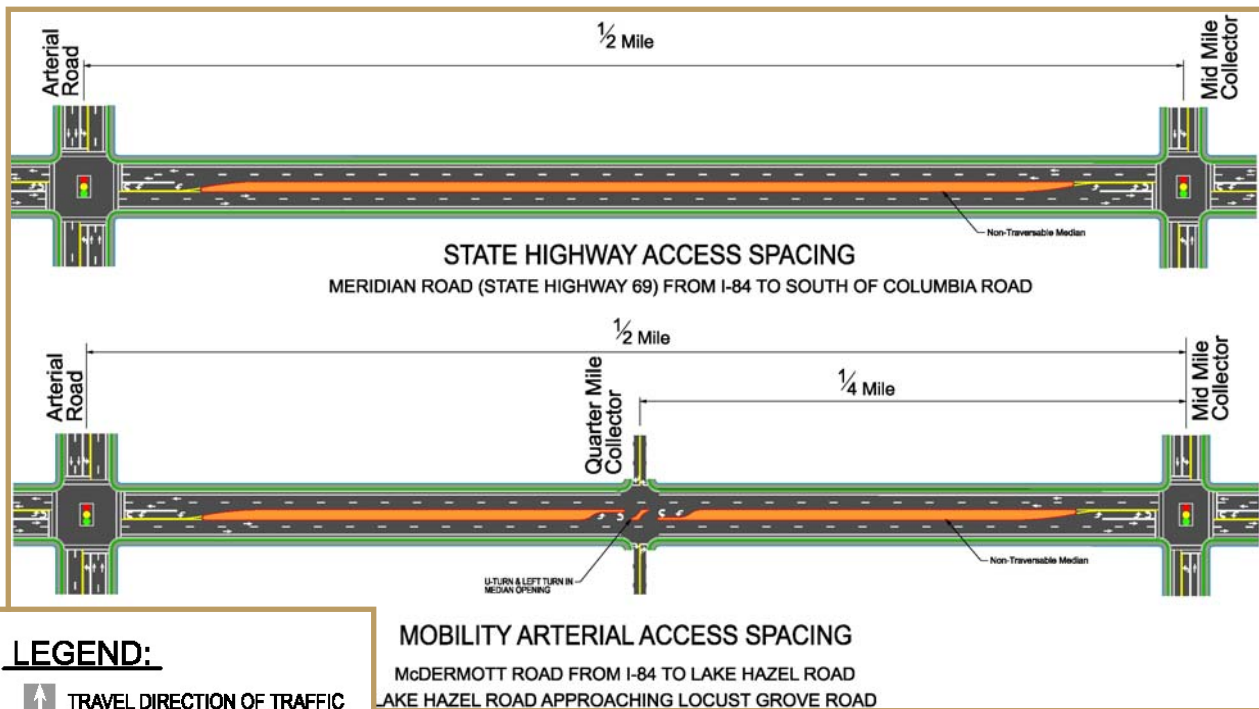
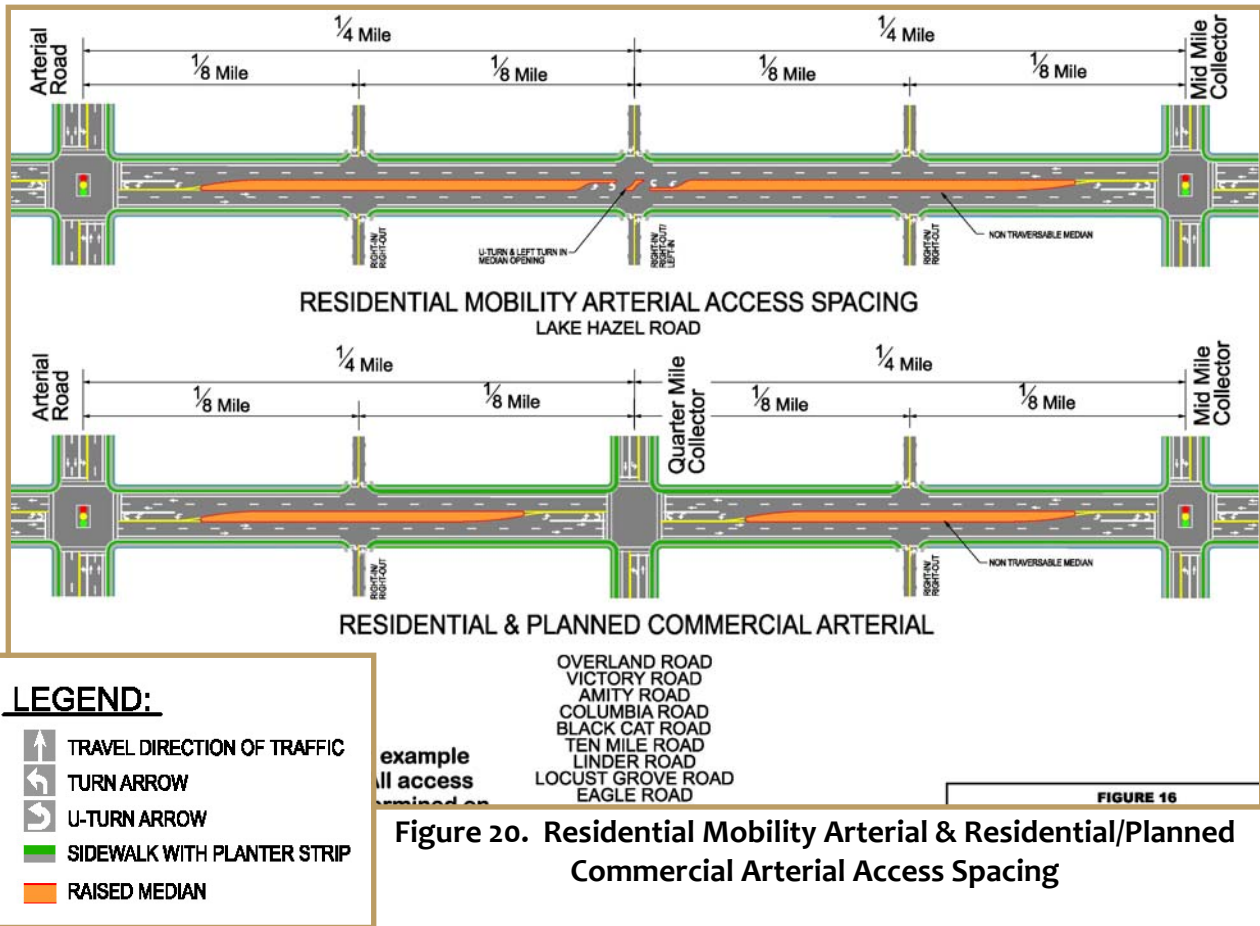


Figure 19. State Highway and Mobility Arterial Access Spacing

**Figure 20** presents potential access standards for Residential Mobility, Planned Commercial, and Residential Arterials. Collector and local road standards can be found in the *ACHD Policy Manual*.



**Figure 20. Residential Mobility Arterial & Residential/Planned Commercial Arterial Access Spacing**

## Access Management Standards by Street Typology

### Arterials

**State Highways** are one step below freeways and expressways in terms of function and design features. These state roadways emphasize moving regional traffic and local access is limited to public road connections. Meridian Road (State Highway 69) is the only state highway in the South Meridian Area and it is owned, operated, and maintained by ITD. It has a posted speed of 55 mph. The current ITD access management documents *Access Management: Standards and Procedures for Highway Right-of-Way Encroachments* and the *State Highway Access Control: Administrative Policy A-12-01* restrict access and signal spacing to ½ mile intervals at arterial and mid-mile collector intersections.

**Mobility Arterials** are designed for high traffic volumes and intended for regional movements. Signalized intersections and full access median breaks are limited to ½ mile intervals at arterial and mid-mile collector intersections. Mobility Arterials generally have higher posted speed limits in the range of 40 to 45 mph. McDermott Road and portion of Lake Hazel Road near Locust Grove Road are designated as a Mobility Arterials in the South Meridian Area.

**Residential Mobility Arterials** are designed for high traffic volumes and intended for regional movements through predominantly residential areas versus commercial or industrial areas. Signalized intersections and full access median breaks are limited to ½ mile intervals at arterial and mid-mile collector intersections. Residential Mobility Arterials generally have higher posted speed limits, in the range of 40 to 45 mph. Lake Hazel Road is designated a Residential Mobility Arterial.

**Planned Commercial Arterials** are designed to move vehicles over long distances. They primarily provide regional travel while allowing local trip access to commercial development along these arterials. Access to these arterials is less restrictive than mobility arterials but still limited to median breaks at major public street intersections. Signalized intersections are limited to ½ mile intervals at arterial and mid-mile collector intersections. Full access median intersections are limited to ¼ mile intersections. Planned Commercial Arterials generally have posted speed limits in the range of 30 to 35 mph. Portions of Overland Road, Victory Road, Amity Road, and Ten Mile Road are designated as Planned Commercial Arterials.

**Residential Arterials** are designed to accommodate moderate to high volumes of traffic with left turn opportunities limited to public street intersections. Access to these arterials is less restrictive than mobility arterials but still limited to major public street intersections. Medians may be used to limit access on these roadways. Two-way left turn lanes are allowed as long as access is still controlled based on the recommendations in this Plan. Signalized intersections or

roundabouts are limited to ½ mile intervals at arterial and mid-mile collector intersections. Full access median intersections, either stop-controlled or roundabouts, are limited to ¼ mile intersections. The majority of arterial roadways in the South Meridian Area are designated as Residential Arterials.

## Collectors

Collectors are crucial to the success of the access management plan as discussed above. The City of Meridian Comprehensive Plan indicates support and the intent to apply the following conclusions of a prior collector study, which include:

- **Intersection spacing**-The intersections of collector roads and arterial roads will be located as close to the ½ mile point as practical within any given section.
- **Alignment**-Collectors should extend in an essentially straight line for 200 feet to 400 feet from the intersection. Beyond that point the alignment is flexible.
- **Internal Connectivity**-Collectors should be continuous within any given one-mile section.
- **Discontinuity between sections**-Collectors should not be continuous for more than 2-3 miles to prevent their use as de facto arterials.

The conclusions are included in the South Meridian Transportation Plan with the following revisions:

- **Intersection spacing**-The intersections of collector roads and arterial roads should be located at or near the ½ mile point within any given section. Collectors should align at intersections where they cross arterial roadways. Additional full access intersections of collector and arterial roads may be allowed at the ¼ mile point along Residential Arterials. The proposed collector network for the South Meridian Area is presented in **Figure 14**. Specific collector design and intersection location should be developed during the application process with ACHD and the City of Meridian.
- **Alignment**-Collectors should extend in an essentially straight line for 200 feet to 400 feet from an arterial intersection. Beyond that point the alignment is flexible but should be continuous through the section and serviceable for the land uses within the section. Some exceptions due to physical land features or existing development may be necessary.
- **Internal Connectivity**-Collectors should be continuous within any given one-mile section in most cases.
- **Transit**-The ACHD *Policy Manual* states that the mid-mile collector/arterial intersection spacing also aids in future transit accessibility.

**Town Center Collectors** are designed to accommodate high traffic volumes as well as pedestrian and bicycle demand. Medians and/or two-way left turn lanes may be used depending on driveways density. Parking may be allowed along these collectors. Access points are guided

by ACHD policy with signalized intersections and roundabouts located at major block locations as appropriate. They generally have posted speeds of 25 mph. The only Town Center Arterial in the South Meridian Area is found near the realigned Overland Road and Ten Mile Road intersection.

**Commercial Collectors** serve as a bridge between the mobility functions of arterials and the access functions of local streets. They connect nodes of commercial activities to commercial corridors and allow development to be focused away from arterials, usually found at regional retail centers. Medians and/or two-way left turn lanes may be used depending on driveways density. Parking may be allowed if approved on a case-by-case basis on these collectors. Access points are guided by current ACHD policy with signalized intersections and roundabouts located at major block locations as appropriate. Commercial collectors are found in locations near regional centers and employments centers on Amity Road and Lake Hazel Road.

**Residential Collectors** help balance the street network on residential areas by providing the bulk of connections to local streets and allowing arterials to have less frequently spaced intersections. Driveways directly accessing Residential Collectors are not desired but may be acceptable in retrofit situations in built environments. Signalized intersections and roundabouts are limited to ½ mile locations. They generally have posted speeds of 25 to 30 mph. The majority of collectors in the South Meridian Area are Residential Collectors.

## Local Roads

**Local Roads** provide access to abutting properties, including individual residences. They carry lower traffic volumes for short trips and provide connection to collectors. They generally have posted speed limits in the range of 20 to 25 mph.

## Alternative Access Strategies

Innovative access management alternatives are encouraged for specific locations in order to provide sustainable roadways that meet the goals of mobility and access. The City of Meridian has planned for large mixed use regional developments around the Amity Road/Meridian Road (State Highway 69) and Lake Hazel Road/Meridian Road (State Highway 69) intersections and a neighborhood center around the Lake Hazel Road/Locust Grove Road intersection. The access needs of these developments may require some innovative access management ideas along the arterial roadways.

An example of a potential access strategy is found in a proposal for the neighborhood center around the Lake Hazel Road/Locust Grove Road intersection. The land owner has researched some innovative alternatives to a conventional, standard intersection. These alternatives, while not strictly adhering to the standards, could provide the desired balance between mobility and

access for the neighborhood center. A brief discussion and example concepts prepared by a potential developer are included in **Appendix G**. Analysis and evaluation of these and all other access spacing alternatives will be conducted during the application process with ACHD and the City of Meridian.

## Access Transition Plan

The access transition plans transfer the existing access to conditions compliant with the standards. Sample plans are provided for each arterial typology and include guidelines for transitioning from existing to proposed access spacing. These are only examples and specific access control plans must be developed for each roadway segment and/or corridor in the area before development occurs.

## Transition Implementation

The access transition process shall be directed by ACHD and the process will be agreed upon by ACHD, the City of Meridian (and ITD along State Highway 69), and the development community during the application process.

Access control stage implementation may be triggered in two ways:

- Traffic volumes at the access points along the defined segments of the roadways
- The phasing of the development; as alternative access is provided through collector roads and frontage/backage roads, direct access to arterials will be removed

The developer will be responsible to develop a specific plan that is tied to traffic impact study analyses related to project phasing, driveway volumes, driveway operations, turn warrant analyses, and signal warrant analyses. They must then monitor the traffic volumes entering and exiting the access points to the development and operational capacity and report them to ACHD at appropriate milestones agreed upon before approving the traffic impact study (e.g. completion of development phases, opening of specific development commercial and/or retail businesses, etc.). These will be required to be submitted to ACHD as updates to the traffic impact study. ACHD will review the traffic volumes and operations at the access points, including reviewing turn and signal warrants, and will direct the developer to implement the appropriate stage of access control. The transition plan will be determined and agreed upon during the traffic impact study phase with ACHD and the City of Meridian. All improvements described below should be paid for by the developments requiring access.

## Mobility Arterials

The following items are consistent throughout all stages of transition for Mobility Arterials:

- Install left turn bays at ¼ mile and ½ mile locations when turn warrants are met.

- Install signals at  $\frac{1}{2}$  mile locations when volume-based or pedestrian-based warrants are met.

**Stage 1** access control provides median and turn lane improvements. Access at existing driveways is limited to right-in/right-out only and access is consolidated to the  $\frac{1}{16}$  mile access locations.

- Establish cross access agreements between adjacent parcels with existing driveways between  $\frac{1}{16}$  mile locations. Convert existing access between  $\frac{1}{16}$  mile locations to right-in/right-out operation through installation of raised medians. Temporary direct access will be allowed until cross access agreements are in place.
- Install raised medians, special pavement markings, and right-turn only signing along roadway sections for all access point except where providing full access openings and turn lanes at  $\frac{1}{16}$  mile,  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile locations.
- Stage 1 access controls should be implemented along roadway sections as improvements are made or redevelopment begins along a section of roadway. At the completion of Stage 1, full access points should only exist at  $\frac{1}{16}$  mile,  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile locations.

**Stage 2** access control expands the collector and local road connections to parcels. It removes all access points between the  $\frac{1}{16}$  mile locations and limits access at the  $\frac{1}{16}$  mile locations to right-in/right-out only.

- Expand collector and local street connections to provide alternative access to  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile access locations.
- Close existing driveways between  $\frac{1}{16}$  mile locations and relocate access to new or existing local streets and collectors. Establish cross access agreements between parcels with access points between  $\frac{1}{8}$  mile locations. Temporary direct access will be allowed until cross access agreements are in place.
- Install raised medians, special pavement markings, and signing restricting access to right-turns only at  $\frac{1}{16}$  mile locations. Maintain full access openings and turn lanes at  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile locations.
- Stage 2 access controls should be implemented along continuous  $\frac{1}{8}$  mile roadway sections as improvements are made or redevelopment begins along a section of roadway. At the completion of Stage 2, full access points should only exist at  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile locations.

**Stage 3** access control continues to expand the collector and local road connections to parcels. It removes all access at the  $\frac{1}{16}$  mile locations and limits access at the  $\frac{1}{8}$  mile locations to right-in/right-out only.

- Continue to expand collector and local street connections to provide alternative access to  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile access locations.

- Close existing  $\frac{1}{16}$  mile access locations and relocate access to new or existing local streets and collectors. Establish cross access agreements between parcels with access points between  $\frac{1}{4}$  mile locations. Temporary direct access will be allowed until cross access agreements are in place.
- Install raised medians, special pavement markings, and signing restricting access to right-turns only at  $\frac{1}{8}$  mile locations. Maintain full access openings and turn lanes at  $\frac{1}{4}$  mile and  $\frac{1}{2}$  mile locations.
- Stage 3 access controls should be implemented along continuous  $\frac{1}{4}$  mile roadway sections as improvements are made or redevelopment begins along a section of roadway. At the completion of Stage 3, full access points should only exist at  $\frac{1}{4}$  mile and  $\frac{1}{2}$  mile locations.

**Stage 4** access control completes the collector and local street network and removes all access other than full access at the  $\frac{1}{2}$  mile locations and right-in/right-out/left-in access at the  $\frac{1}{4}$  mile locations.

- Complete collector and local street connections to provide alternative access to  $\frac{1}{4}$  mile and  $\frac{1}{2}$  mile access locations.
- Close existing  $\frac{1}{8}$  mile access locations and relocate access to new or existing local streets and collectors.
- Install raised medians, special pavement markings, and signing restricting access to right-turns and left-in only movements at  $\frac{1}{4}$  mile locations. Maintain full access openings and turn lanes at  $\frac{1}{2}$  mile locations.
- Stage 4 access controls should be implemented along continuous  $\frac{1}{2}$  mile roadway sections as improvements are made or redevelopment begins along a section of roadway. At the completion of Stage 3, full access points should only exist at  $\frac{1}{2}$  mile locations.

## Residential Mobility Arterials

The following items are consistent throughout all stages of transition for Residential Mobility Arterials:

- Install left turn bays at  $\frac{1}{4}$  mile and  $\frac{1}{2}$  mile locations when warrants are met.
- Install signals at  $\frac{1}{2}$  mile locations when volume based or pedestrian-based warrants are met and at  $\frac{1}{4}$  mile locations when pedestrian-based warrants are met.

**Stage 1** access control provide median and turn lane improvements. Access at existing driveways is limited to right-in/right-out only and access is consolidated to the  $\frac{1}{16}$  mile access locations.

- Establish cross access agreements between adjacent parcels with existing driveways between  $\frac{1}{16}$  mile locations. Convert existing access between  $\frac{1}{16}$  mile locations to right-in/right-out operation through installation of raised medians. Temporary direct access will be allowed until cross access agreements are in place.

- Install raised medians, special pavement markings, and right-turn only signing along roadway sections for all access point except where providing full access openings and turn lanes at  $\frac{1}{16}$  mile,  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile locations.
- Stage 1 access controls should be implemented along roadway sections as improvements are made or redevelopment begins along a section of roadway. At the completion of Stage 1, full access points should only exist at  $\frac{1}{16}$  mile,  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile locations.

**Stage 2** access control expands the collector and local road connections to parcels. It removes all access points between the  $\frac{1}{16}$  mile locations and limits access at the  $\frac{1}{16}$  mile locations to right-in/right-out only.

- Expand collector and local street connections to provide alternative access to  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile access locations.
- Close existing driveways between  $\frac{1}{16}$  mile locations and relocate access to new or existing local streets and collectors. Establish cross access agreements between parcels with access points between  $\frac{1}{8}$  mile locations. Temporary direct access will be allowed until cross access agreements are in place.
- Install raised medians, special pavement markings, and signing restricting access to right-turns only at  $\frac{1}{16}$  mile locations. Maintain full access openings and turn lanes at  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile locations.
- Stage 2 access controls should be implemented along continuous  $\frac{1}{8}$  mile roadway sections as improvements are made or redevelopment begins along a section of roadway. At the completion of Stage 2, full access points should only exist at  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile locations.

**Stage 3** access control completes the collector and local street network connections to parcels. It removes all access at the  $\frac{1}{16}$  mile locations and limits access at the  $\frac{1}{8}$  mile locations to right-in/right-out only.

- Complete collector and local street connections to provide alternative access to  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile access locations.
- Close existing  $\frac{1}{16}$  mile access locations and relocate access to new or existing local streets and collectors. Establish cross access agreements between parcels with access points between  $\frac{1}{4}$  mile locations. Temporary direct access will be allowed until cross access agreements are in place.
- Install raised medians, special pavement markings, and signing restricting access to right-turns only at  $\frac{1}{8}$  mile locations and to right-turns and left-in only at  $\frac{1}{4}$  mile locations. Maintain full access openings and turn lanes at  $\frac{1}{2}$  mile locations.

- Stage 3 access controls should be implemented along continuous  $\frac{1}{4}$  mile roadway sections as improvements are made or redevelopment begins along a section of roadway. At the completion of Stage 3, full access points should only be at  $\frac{1}{2}$  mile locations.

## Planned Commercial and Residential Arterials

The following items are consistent throughout all stages of transition for Residential and Planned Commercial Arterials:

- Install left turn bays at  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile locations when warrants are met.
- Install signals at  $\frac{1}{2}$  mile locations when volume based or pedestrian-based warrants are met and at  $\frac{1}{4}$  mile locations when pedestrian-based warrants are met. Roundabouts may be an acceptable intersection control alternative to traffic signals at intersections along Residential and Planned Commercial Arterials if analyzed and recommended in an engineering study.

**Stage 1** access control provides median and turn lane improvements. Access at existing driveways is limited to right-in/right-out only and access is consolidated to the  $\frac{1}{16}$  mile access locations.

- Relocate arterial access points within the storage length of turn bays to existing non-arterial streets and close the access points. Construct new collector or local street connections to the arterial as needed. Convert existing access between  $\frac{1}{16}$  mile locations to right-in/right-out operation through installation of raised medians. Temporary direct access will be allowed until cross access agreements are in place.
- Install raised medians, special pavement markings, and right-turn only signing along roadway sections for all access point except where providing full access openings and turn lanes at  $\frac{1}{16}$  mile,  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile locations.
- Stage 1 access controls should be implemented along roadway sections as improvements are made or redevelopment begins along a section of roadway. At the completion of Stage 1, full access points should only exist at  $\frac{1}{16}$  mile,  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile locations.

**Stage 2** access control expands the collector and local road connections to parcels. It removes all access points between the  $\frac{1}{16}$  mile locations and limits access at the  $\frac{1}{16}$  mile locations to right-in/right-out/left-in only.

- Expand collector and local street connections to provide alternative access to  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile access locations.
- Close existing driveways between  $\frac{1}{16}$  mile locations and relocate access to new or existing local streets and collectors. Establish cross access agreements between parcels with access points between  $\frac{1}{8}$  mile locations. Temporary direct access will be allowed until cross access agreements are in place.

- Install raised medians, special pavement markings, and signing restricting access to right-turns and left-in only at  $\frac{1}{16}$  mile locations. Maintain full access openings and turn lanes at  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile locations.
- Stage 2 access controls should be implemented along continuous  $\frac{1}{8}$  mile roadway sections as improvements are made or redevelopment begins along a section of roadway. At the completion of Stage 2, full access points should only exist at  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile locations.

**Stage 3** access control completes the collector and local road connections to parcels. It removes all access at the  $\frac{1}{16}$  mile locations and limits access at the  $\frac{1}{8}$  mile locations to right-in/right-out only.

- Complete collector and local street connections to provide alternative access to  $\frac{1}{8}$  mile,  $\frac{1}{4}$  mile, and  $\frac{1}{2}$  mile access locations.
- Establish cross access agreements between parcels with access points between  $\frac{1}{8}$  mile locations. Temporary direct access will be allowed until cross access agreements are in place.
- Install raised medians, special pavement markings, and signing restricting access to right-turns only at  $\frac{1}{8}$  mile locations. Maintain full access openings and turn lanes at  $\frac{1}{4}$  mile and  $\frac{1}{2}$  mile locations.
- Stage 3 access controls should be implemented along continuous  $\frac{1}{4}$  mile roadway sections as improvements are made or redevelopment begins along a section of roadway. At the completion of Stage 3, full access points should only be at  $\frac{1}{4}$  mile and  $\frac{1}{2}$  mile locations.

## Collectors and Local Roads Access Control Plan

Collectors and local roads should be designed and constructed to facilitate arterial compliance with the South Meridian Access Management Plan.

## Access Management Implementation

This Access Management Plan provides an opportunity for collaboration between ACHD and the City of Meridian to ensure access along arterials is appropriate for adjacent land uses and provides necessary mobility. Specific proposals may be discussed and refined, similar to the process currently occurring at the neighborhood center around the Lake Hazel Road and Locust Grove Road intersection. Land owners actively seeking to redevelop should be aware of the access standards and the reasoning behind them, including the street typologies. The development application process will allow ACHD, the City of Meridian, and the landowners to determine how access standards will be met, including transition plans.

ACHD's roles in implementing the Access Management Plan include:

- Closing, consolidating, and/or relocating access points as appropriate
- Requiring and reviewing traffic impact study information related to project phasing, driveway volumes, and operations of proposed access points
- Recommending cross access locations to the City of Meridian
- Determining temporary access locations with the City of Meridian
- Holding financial surety to ensure the closure of all temporary access points
- Attending joint pre-application meetings with the City of Meridian on large or complicated projects in the area or as needed

The City of Meridian's roles in implementing the Access Management Plan include:

- Incorporating the Access Management Plan standards into the City's Comprehensive Plan and/or City Code
- Working with ACHD to close, consolidate, and/or relocate access points as appropriate
- Participating in traffic impact study reviews as appropriate
- Administering cross access agreements
- Attending joint pre-application meetings with ACHD on large or complicated projects in the area or as needed

## Access Management Plan Update

The Access Management Plan should be reviewed periodically (e.g. every 3-5 years) to ensure that it accurately represents the access needs along the arterial roadways in the South Meridian Area. As land in the area develops some adjustments may be made to the current land use forecast. These adjustments should be accounted for in updating the Access Management Plan. Also, the function and typology of individual roadway segments may vary as development occurs and the standards may be updated by ACHD as needed to better serve the roadway users traveling through the South Meridian Area.

## Variance Process

If a development proposed an access point that does not meet the Plan standards, the developer may follow standard ACHD variance process (as outlined in the *ACHD Policy Manual*) to demonstrate the need for that access point.

# Alternative Transportation and Intelligent Transportation System Plans

## Alternative Transportation Plans

### Transit Plans

Valley Regional Transit (VRT) is the regional public transportation authority for Ada and Canyon Counties in Southwest Idaho and coordinates public transportation services. VRT owns and operates the public bus system in Boise/Garden City and contracts for transit services for Nampa/Caldwell and between Ada and Canyon Counties operated under the name ValleyRide.

The VRT *Regional Operations and Capital Improvement Plan* is combined in the *Treasure Valley in Transit Plan*. Details of this plan can be found on the VRT website at [www.valleyregionaltransit.org](http://www.valleyregionaltransit.org).

The plan developed estimates for two long range (ten years and beyond) service options, the first described as “Modest” and the second described as a “More Extensive Regional Public Transportation System.” The VRT Board of Directors approved the more comprehensive option in September 2006. This option would extend transit service to include all cities in the two-county region and thus provide about 500% more service.

The approved more comprehensive long range service option in the South Meridian Area includes bus service on I-84 from Boise to Caldwell every 15 minutes all day long. It also includes the same 15-minute service all day long on Overland Road from Meridian Road (State Highway 69) to the east into Boise and on Meridian Road from Overland Road to Downtown Meridian with a transfer point that would include 9 separate routes. It also includes a rapid transit facility with a park & ride lot on Eagle Road from Overland Road to Franklin Road. Another transit route would use Meridian Road (State Highway 69) from the park & ride lots in Kuna to Overland Road with service every 30 minutes during commute times and service every 60 minutes during midday.

This potential transit expansion could reduce the number of personal vehicles on several South Meridian arterial roadways, thus reducing traffic congestion and improving air. Specific projects will have to account for transit needs when they are designed (e.g. providing bus stops and turnouts, special signal timings, etc.).

## Commuteride Park & Ride Lots

The Meridian Road Commuteride park & ride lot is the only one with bus service at this time but that will change as the transit system expands. All park-and-ride lots owned by ACHD Commuteride are designed to allow bus service in the future. The new interchange at Ten Mile Road and the potential State Highway 16 connection to I-84 near McDermott Road would be logical places for additional park & ride lots.

## Intelligent Transportation System Plan

ITS planned in the South Meridian Area was found in ACHD's *Treasure Valley Intelligent Transportation Systems (ITS) Strategic Plan*. This plan divides future ITS plans into short term (1-5 years), medium term (6-10 years), and long term (beyond 10 years) applications. Multiple technologies may be deployed together and may require communications infrastructure (fiber optics, etc.) to be in place prior to deployment. There are several projects in the South Meridian Area that will eventually be linked to the TMC operated by ACHD to provide a comprehensive ITS network that will improve travel time, reduce delay, and reduce the number and duration of incidents.

### Short Term ITS Projects

CCTV cameras are planned for installation at the signalized intersections along the following corridors:

- I-84 from the Eagle Interchange to the Meridian Interchange
- I-84 from the Meridian Interchange to McDermott Road
- Ten Mile Road from Cherry Lane to Overland Road
- Meridian Road (State Highway 69) from Overland Road to Kuna Road

### Long Term ITS Projects

CCTV cameras are planned for installation at the signalized intersections along the following corridors:

- McDermott Road from Ustick Road to Amity Road (part of potential State Highway 16 extension to I-84)
- Ten Mile Road from Overland Road to Victory Road
- Victory Road from Ten Mile Road to Orchard Street
- Amity Road from 12th Avenue to Meridian Road (State Highway 69)
- Lake Hazel Road from State Highway 69 to Gowen Road

These projects have been conducted with other agencies, are not funded at this time, and are subject to update and revision in the future.

## Next Steps

The South Meridian Transportation Plan findings and recommendations should be reviewed periodically (e.g. every 3-5 years) with the FYWP/CIP updates to ensure they accurately represent the transportation needs in the South Meridian Area. As land in the area develops and travel patterns change, adjustments and revisions by ACHD and the City of Meridian may be necessary to best serve the roadway users traveling through the South Meridian Area.

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