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April 20, 2023

Development Services

TO: Nathan Mitchell  
A + E Construction, LLC

FROM: Mindy Wallace, AICP  
Planning Review Supervisor

SUBJECT: Willowbrook Master Planned Development  
Annexation-Zoning and Development Agreement with the City of Star

North of Lanktree Gulch Road between Can Ada Road and SH-16

## Introduction

Willowbrook Development Inc. is requesting approval of an annexation-zoning application to allow for the future development of the Willowbrook Master Planned Development, this application also includes a development agreement with the City of Star.

The development is proposed on approximately 720 acres of undeveloped land located north of Lanktree Gulch Road between Can Ada Road and SH-16 north of the existing city limits of Star, Idaho. The master planned development is proposed to consist of: 948 single family dwelling units, 146 townhomes, 18-hole public golf course, and 75,000 square feet of shopping center.





The intent of this memo is to establish standards and guidelines for future preliminary plat phases. As individual preliminary plats are submitted under this Master Planned Development, the Ada County Highway District (ACHD) will provide detailed analysis of street layout, street design and construction, and will be a signatory on the plat.

This application is for annexation and rezoning only. For the current application, ACHD is a recommending body to the City of Star.

## **ACHD Comments and Recommendations**

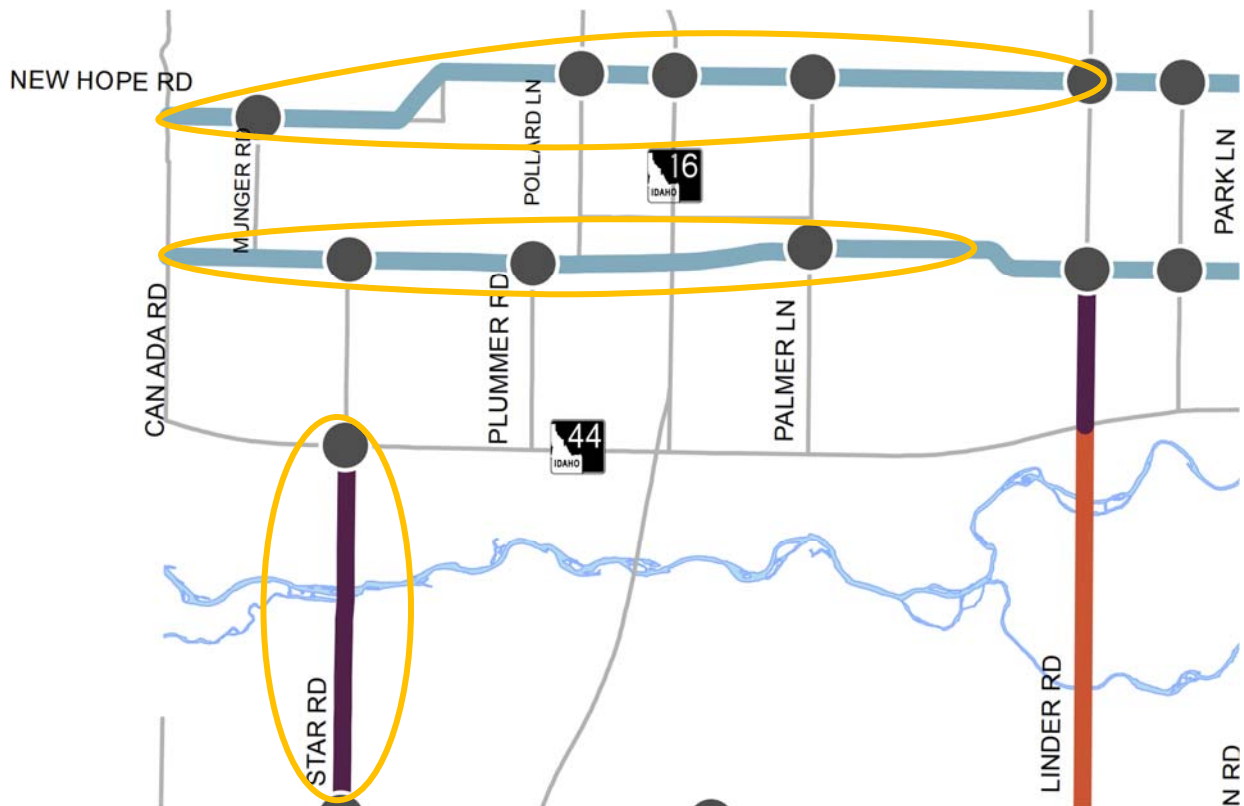
### **1. Capital Improvement Plan (CIP)/Integrated Five Year Work Plan (IFYWP)**

The following improvements are scheduled in ACHD's IFYWP or listed in the CIP:

- Beacon Light Road from SH-16 to Ballantyne Road is scheduled for roadway and ADA improvements in 2023.
- Floating Feather Road/Pollard Lane from Brandon Road to Hornback Avenue is scheduled for roadway and ADA improvements in 2025.
- Floating Feather Road/Pollard Lane from Hornback Avenue to Broken Arrow Lane is scheduled for roadway and ADA improvements beyond 2026.
- Star Road from Hidden Brook Drive to Borealis Street is scheduled to conduct a concept study to identify and recommend corridor improvements for all users beyond 2026.
- Star Road from State Street (SH 44) to Otter Lane is scheduled for roadway and ADA improvements in 2025.
- The New Hope Road/Munger Road intersection is listed in the CIP to be widened to a single lane roundabout between 2036 to 2040 (Project #0710).
- The Beacon Light Road/SH-16 intersection is listed in the CIP to be widened to 4 lanes on the north, south, east, and west approaches and signalized between 2036 to 2040 (Project #0130).
- The Beacon Light Road/Palmer Lane intersection is listed in the CIP to be widened to a single lane roundabout between 2036 to 2040 (Project #0150).
- The Beacon Light Road/Pollard Lane intersection is listed in the CIP to be widened to a single lane roundabout between 2036 to 2040 (Project #0170).
- The Floating Feather Road/Palmer Lane intersection is listed in the CIP to be widened to a single lane roundabout in 2036 to 2040 (Project #0400).
- The Floating Feather Road/Plummer Road intersection is listed in the CIP to be widened to a single lane roundabout in 2036 to 2040 (Project #0420).
- The Floating Feather Road/Star Road intersection is listed in the CIP to be widened to a single lane roundabout in 2036 to 2040 (Project #0430).
- The State Street (SH 44)/Star Road intersection is listed in the CIP to be widened to 4 lanes on the north/south legs and 6 lanes on the east/west legs in 2026 to 2030 (Project #0830).
- New Hope Road from Can Ada Road to Munger Road is listed in the CIP to be widened to 3 lanes in 2036-2040 (Project #1070).

- New Hope Road/Beacon Light Road from Munger Road to Pollard Lane is listed in the CIP to be widened to 3 lanes in 2036-2040 (Project #0070).
- Beacon Light Road from Pollard Lane to SH-16 is listed in the CIP to be widened to 3 lanes in 2036-2040 (Project #0080).
- Beacon Light Road from SH-16 to Palmer Lane is listed in the CIP to be widened to 3 lanes in 2036-2040 (Project #0090).
- Beacon Light Road from Palmer Lane to Linder Road is listed in the CIP to be widened to 3 lanes in 2036-2040 (Project #0100).
- Floating Feather Road from Can Ada Road to Star Road is listed in the CIP to be widened to 3 lanes in 2036-2040 (Project #0510).
- Floating Feather Road from Star Road to Plummer Road is listed in the CIP to be widened to 3 lanes in 2036-2040 (Project #0520).
- Floating Feather Road from Plummer Road to SH-16 is listed in the CIP to be widened to 3 lanes in 2036-2040 (Project #0530).
- Floating Feather Road from SH-16 to Palmer Lane is listed in the CIP to be widened to 3 lanes in 2036-2040 (Project #0540).
- Star Road from State Street (SH 44) to Chinden Boulevard (US 20/26) is listed in the CIP to be widened to 5 lanes in 2031-2035 (Project #1210).

### CIP Project Map



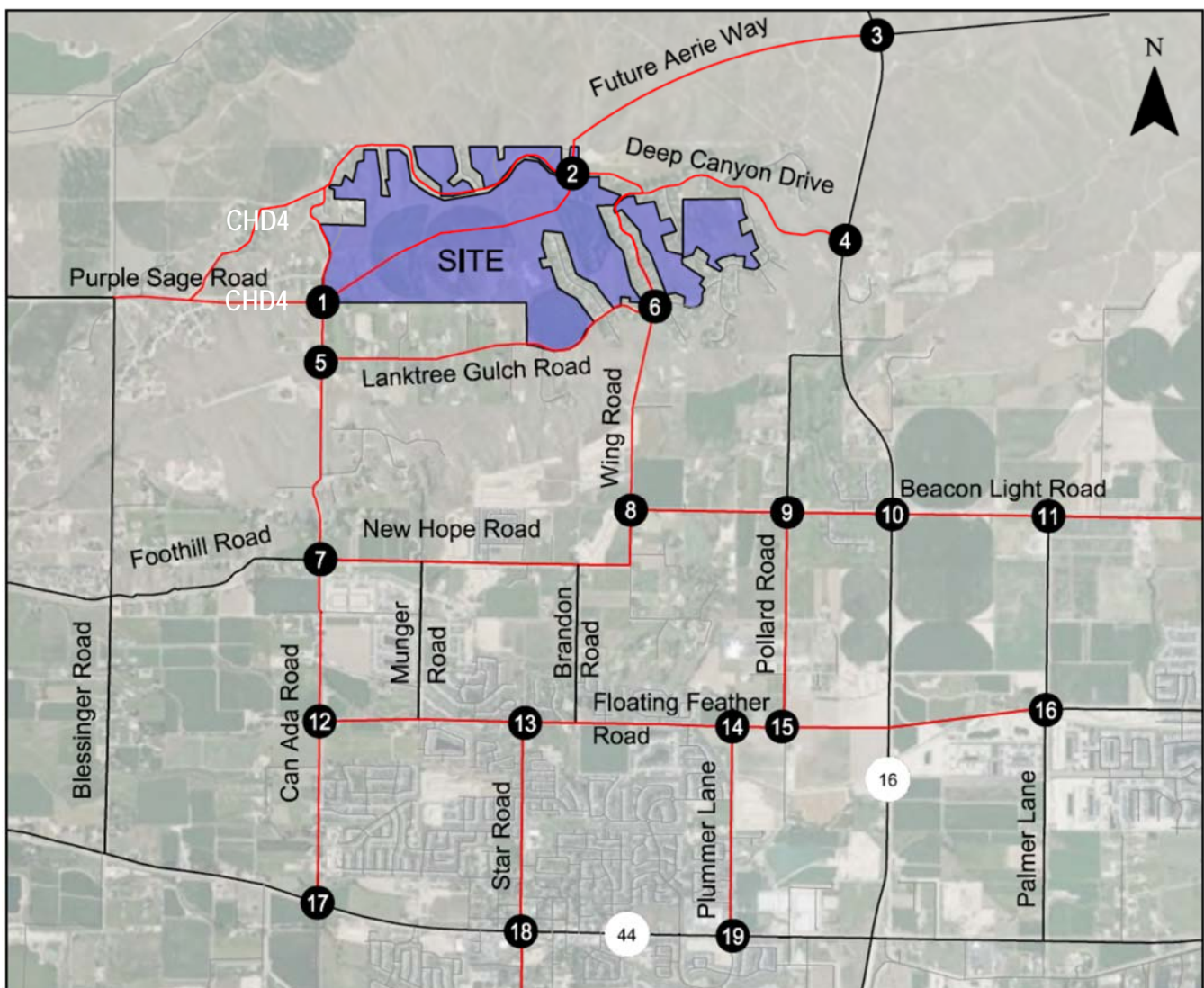
## 2. Traffic Impact Study

Kittelson & Associates prepared a TIS for the proposed development. The TIS was accepted as meeting the technical requirements of ACHD's TIS policy; however, ACHD may not agree with all findings and recommendations.

The TIS included 2 different scenarios, an analysis of the first phase of the proposed development and a planning level roadway and intersection analysis for the full build out of the development and to highlight roadway and intersection improvements due to site-generated traffic at Phase 1 and full build out of the site. The summary below is specific to total traffic conditions.

### TIS Area

The TIS area was extended to beyond the roadways within and adjacent to the development to allow for analysis of all the traffic impacts. The extended study area included 19 offsite intersections and 26 roadway segments (two under the exclusive jurisdiction of Canyon Highway District No. 4) as shown below.





The TIS analyzed the impacts of the subject development and identified the street and intersection improvements necessary to address the projected impacts. A complete executive summary of the study is included in attachment 3. Below is an identification of the scope:

- Trip Generation of the proposed developments
- Site traffic distribution and traffic assignment
- Planning level threshold roadway and intersection capacity analysis
- Recommended roadway sizes and intersection improvements to serve the site in 2045

#### TIS

##### a. Build-Out Year and Off-Site Traffic Projections

The projected build-out year for the Development is 2045, and the year 2045 was used as a horizon year. The study provides an analysis of the 2045 traffic conditions with and without the master planned development and provides a comparison of the improvements necessary to mitigate the site-generated traffic impacts to the improvement listed in ACHD's CIP.

##### b. Offsite Improvements

- i. The TIS includes 26 roadway segments and 19 intersections in the study area. The current CIP has improvements planned through 2040 and only has planned improvements for 6 miles of New Hope Road/Beacon Light Road between Can Ada Road and Linder Road, 3.5 miles of Floating Feather Road between Can Ada Road and Palmer Lane, 2 miles of Star Road between State Street (SH-44) and Chinden Boulevard (US 20/26), 5 study area intersections along the Beacon Light Road corridor, 3 study area intersections along the Floating Feather corridor, and the Star Road and State Street (SH-44) intersection. No other study area roadway or intersections are currently planned for improvements.

The table below identifies the study intersections and roadway segments, the number of lanes the roadways are anticipated to have in 2045 based on the CIP and notes whether the intersections and roadways will be over capacity at the build out of the Planned Community. This table is based on total traffic conditions in 2045 (background and site-generated traffic). With select improvements made which include the following assumed improvements:

- Construction of Aerie Way between SH-16 and Deep Canyon
- Construction of Wing Road between Beacon Light and Lanktree Gulch Road
- Construction of Floating Feather Road between Munger Road and Can-Ada Road
- Construction of Floating Feather Road between Pollard Lane and Palmer Lane



**Table 1. 2045 Willowbrook Master Planned Development Roadway Segments Improvement Summary**

Roadway Segment	Segment	Classification <sup>1</sup>	Existing Travel Lanes <sup>2</sup>	ACHD CIP Travel Lanes <sup>2</sup>	Future 2045 Travel Lanes without Willow Brook <sup>2</sup>	Future 2045 Travel Lanes with Willow Brook <sup>2</sup>	2045 Background or Project Need
Deep Canyon Dr	Purple Sage Rd to Can Ada Rd	Local	2	N/A	2	2	Project Need
	Can Ada Rd to Aerie Wy		2	N/A	2	2	No Need
	Aerie Wy to SH-16		2	N/A	2	2	No Need
Aerie Wy	Deep Canyon Dr to SH-16	Minor Arterial	N/A	N/A	N/A	2	No Need
Lanktree Gulch Rd	Can Ada Rd to Wing Rd	Local	2	N/A	2	2	No Need
Purple Sage Rd	Blessinger Rd to Can Ada Rd	Collector	2	N/A	2	3 <sup>4</sup> (CHD4)	Project Need <sup>4</sup>
Can Ada Rd	Deep Canyon Dr to Purple Sage Rd	Local	2	N/A	2	2	No Need
	Purple Sage Rd to Lanktree Gulch Rd	Collector	2	2	2	3 or Reclassification	Project Need
	Lanktree Gulch Rd to New Hope Rd		2	2	2	3 or Reclassification	Project Need
	New Hope Rd to Floating Feather Rd	Minor Arterial	2	2	2	2	No Need
	Floating Feather Rd to SH-44		2	2	2	2	No Need
Wing Rd	Lanktree Gulch Rd to Beacon Light Rd	Local	2	N/A	2	3 or Reclassification	Project Need
New Hope Rd / Beacon Light Rd	Can Ada Rd to Wing Rd	Minor Arterial	2/3	3	2	2	No Need
	Wing Rd to Pollard Ln		2	3	5 <sup>3</sup>	5 <sup>3</sup>	Background
	Pollard Ln to SH-16		3	3	5 <sup>3</sup>	5 <sup>3</sup>	Background
	SH-16 to Palmer Rd		2	3	5 <sup>3</sup>	5 <sup>3</sup>	Background
	Palmer Rd to Linder Rd		2	3	5 <sup>3</sup>	5 <sup>3</sup>	Background
Pollard Rd	Beacon Light Rd to Floating Feather Rd	Collector	2	3	3	3	Background
Floating Feather Rd	Can Ada Rd to Star Rd	Minor Arterial	Partial 2	3	2	2	No Need
	Star Rd to Plummer Ln		2	3	5 <sup>3</sup>	5 <sup>3</sup>	Background
	Plummer Rd to Pollard Ln		2	3	3	3	Background
	Pollard Ln to SH-16		2	3	2	2	No Need
	SH-16 to Palmer Rd		2	3	2	2	No Need
Star Rd	Floating Feather Rd to SH-44	Collector	3	3	5 <sup>3</sup>	5 <sup>3</sup>	Background
	SH-44 to Joplin Rd	Minor Arterial	2	5	5	5	Background
Plummer Rd	SH-44 to Floating Feather Rd	Collector	2	3	3	3	Background

Notes: <sup>1</sup> Per COMPASS 2040 Functional Street Classification Map; <sup>2</sup>Travel lanes include the total number of lanes across the roadway’s respective cross section; <sup>3</sup>Roadway constrained to less lanes for preservation on the ACHD Master Street Map; <sup>4</sup>Five lanes is needed on the east end of segment near SH 55; Two lanes remains under capacity without access and five lanes is needed to meet ACHD Segment LOS standards. <sup>6</sup> CHD4 segment exceeds CHD4 collector thresholds but meets ACHD collector peak hour peak direction thresholds; ADT exceeds 5,000 ADT recommended guideline.

The TIS identifies the following intersections and roadway segments as needing improvements to accommodate development build-out, forecasted in 2045:

- Purple Sage Road / Can Ada Road
- Deep Canyon Drive / SH-16
- Beacon Light Road / Pollard Road
- Beacon Light Road / SH-16
- Beacon Light Road / Palmer Lane
- Floating Feather Road / Star Road
- Floating Feather Road / Plummer Road
- SH-44 / Can Ada Road



- SH-44 / Star Road
- SH-44 / Plummer Road
- Deep Canyon Drive between Aerie Way and SH-16 (1.5 miles)
- Lanktree Gulch Road between Can Ada Road and Wing Road (1.7 miles)
- Purple Sage Road between Blessinger Road and Can Ada Road (1 mile)
- New Hope Road/Beacon Light Road between Can Ada Road and Palmer Lane (5.1 miles)
- Floating Feather Road between Star Road and Pollard Road (1.25 miles)
- Star Road between Floating Feather Road and Joplin Road (2.5 miles)
- Plummer Road between SH-44 and Floating Feather Road (1 mile)

If the applicant is unable to make improvements to impacted intersections and roadway segments when needed to serve the site, the applicant may need to wait for ACHD to make them before proceeding with future phases of the development. All intersection and roadway improvements necessary to serve the site will be verified through traffic impact studies submitted with future preliminary plat applications.

The TIS states that additional lanes or widening beyond what is listed in ACHD's CIP and MSM are needed at the following intersections:

- Purple Sage Road / Can Ada Road, convert to single-lane roundabout.
- Deep Canyon Drive / SH-16, disconnection at SH-16.
- Beacon Light Road / Pollard Lane, convert from single lane roundabout to multi-lane roundabout.
- Beacon Light Road / SH-16, widen SH-16 to five lanes + dual westbound right-turn lanes.
- Beacon Light Road / Palmer Lane, convert from single-lane to multi-lane roundabout.
- SH-44 / Can Ada Road, convert from two-way stop to signal or RCUT
  - Based on the ITD SH 44 Corridor Plan, an RCUT is planned at the intersection
- SH-44 / Star Road, add turn lanes beyond the CIP's signalized intersection configuration
- SH-44 / Plummer Road, add turn lanes beyond the ITD SH 44 Corridor Plan configuration

Based on this information, the land uses may need to be revised, or a request to modify the MSM may be necessary to change the lane configurations at the intersections listed above to allow for right-of-way preservation necessary to accommodate future impacts from preliminary plats within the development. As part of the preliminary plat application the applicant can request a modification to the MSM.

The TIS states the future number of lanes needed on Beacon Light Road is 5 lanes. At this time, ACHD has no plans to widen Beacon Light Road between Can Ada Road and SH-55 beyond the 3 lanes currently listed in ACHD's MSM and CIP. To accommodate the future traffic impacts, the city may need to consider a revision to the land uses, request a change to the MSM to accommodate the future traffic impacts from the preliminary plats within the development, or accept high levels of traffic congestions in area of the city impacted by the traffic generated by the Willowbrook Master Planned Community.



Deep Canyon Drive, Star Road north of State Street (SH-44), the SH-44 / Can Ada Road intersection, and the SH-44 / Plummer Road intersection are not currently listed in ACHD's CIP and IFYWP for capacity improvements.

### 3. Trip Generation and Trip Capture

#### a. Phase 1 Land Use Assumptions

- i. 330 dwellings units
  1. 285 single family dwelling units
  2. 45 townhomes
- ii. 18-hole public golf course

#### b. Build-Out Trip Generation

- i. Phase 1 is anticipated to generate:
  1. 3,535 vehicle trips per day, and
  2. 358 vehicle trips per hour during the PM peak hour

#### c. Build-Out Land Use Assumptions

- i. 1,094 dwellings units
  1. 948 single family dwelling units
  2. 146 townhomes
- ii. 18-hole public golf course
- iii. 75,000 square feet of commercial/shopping center

#### d. Build-Out Trip Generation

- i. At the time of full build-out in 2045 the Development is anticipated to generate:
  1. 12,821 vehicle trips per day, and
  2. 1,097 vehicles per hour during the PM peak hour

#### e. Proposed Build-Out Trip Capture Percentages

- i. The submitted TIS estimates that with build-out of the master planned development, approximately 7% of the daily trips, 3% of the AM peak hour trips, and 11% of the PM peak hour trips will be retained within the development due to the proposed mix of uses.

**ACHD Comment:** ACHD has reviewed the methodology utilized by Kittelson & Associates, Inc for the trip capture, and is supportive of the methodology utilized, as the applicant's engineer used the procedure outlined in the ITE Trip Generation Handbook for calculating the trip capture as required by ACHD. ACHD agrees with the trip capture rates presented by the applicant's engineer. The actual trip capture rates will need to be verified with each revised TIS.

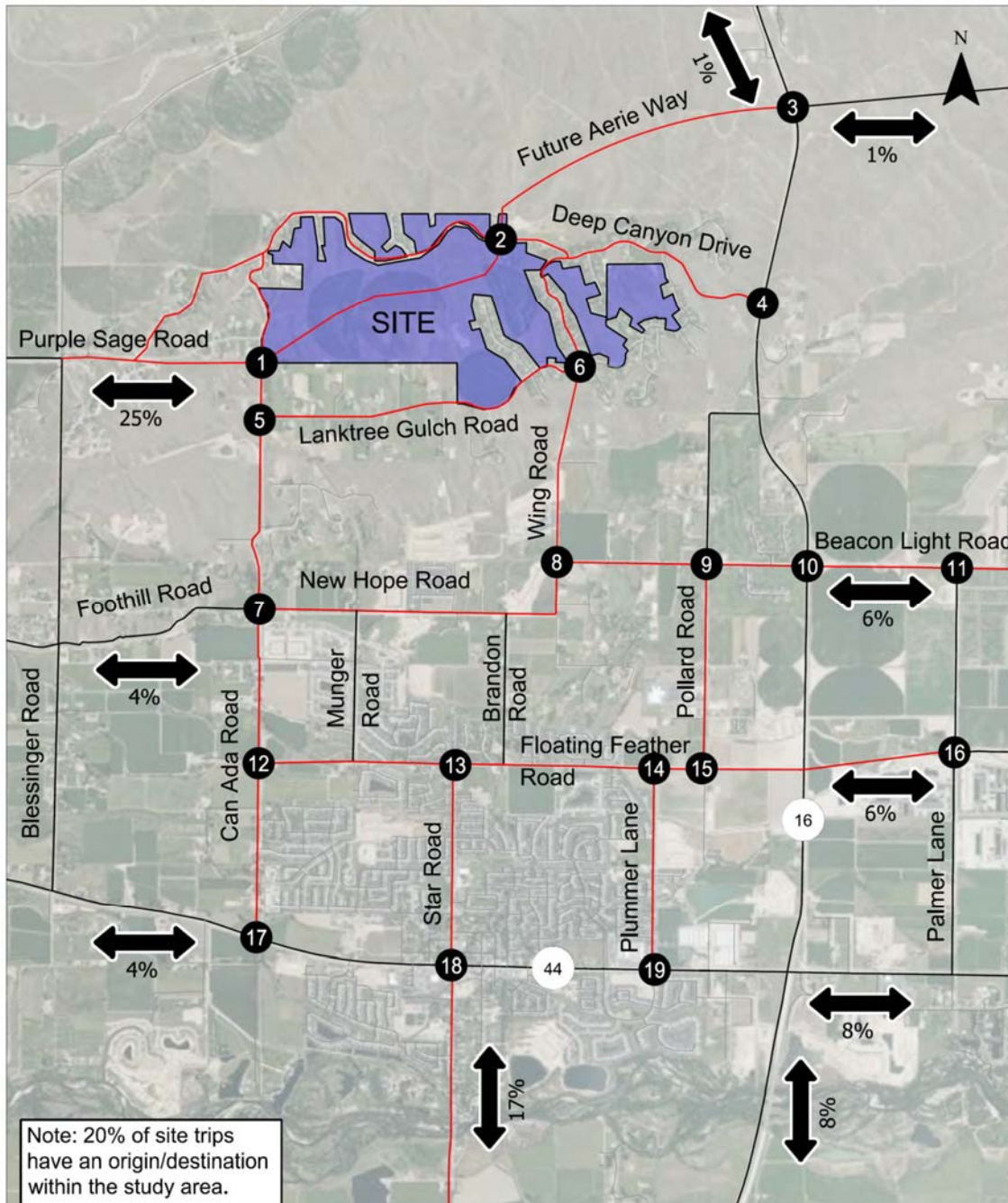
### 4. Trip Distribution

a. The submitted TIS estimates that 33% of the site-generated traffic will travel east/west from Canyon County, 26% of the site-generated traffic will travel north/south on SH-16 and Star Road, and the remaining 41% will travel east/west from north Eagle and SH-44, from those points the traffic was distributed based on COMPASS's 2045 regional travel demand model.

b. **ACHD Comment:** ACHD will require that the site traffic distribution be reviewed with each phase and preliminary plat submittal as part of the required future traffic impact studies. This will allow ACHD to evaluate whether additional mitigation measures are necessary if site traffic distribution is not as estimated in TIS by the applicant's engineer.



## Trip Distribution



### 5. Phasing Plan/Future Traffic Impact Studies

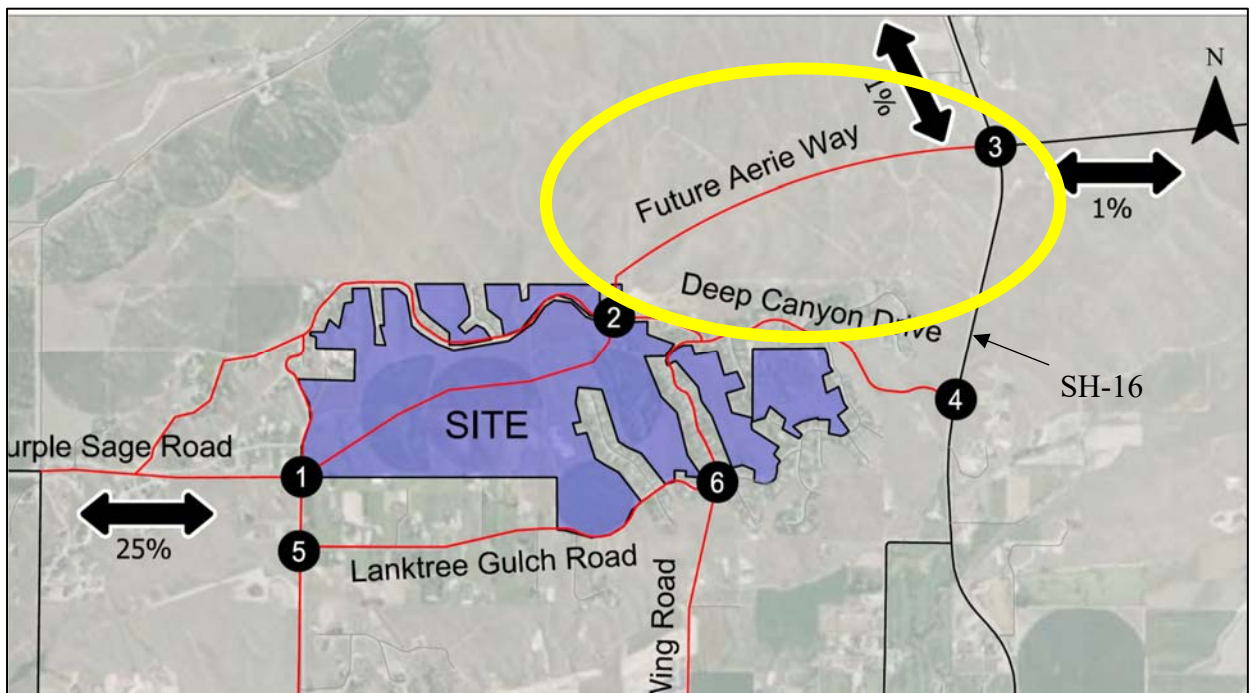
- a. A full phasing plan was not provided as part of this application; however, the application materials indicate that the development is proposed to be constructed in multiple phases over the next 20+ years depending on market conditions. The first preliminary plats are anticipated to correlate to the first phase as discussed within the TIS, which consists of 285 single-family and 45 townhouse residential lots, an 18-hole public golf course. However, the City of Star has indicated that approval of the public golf course will be included as part of the development agreement associated with the current annexation and rezone applications and will not be subject to a separate development application.

District policy 7106.7.2 states that for large scale developments, like planned communities or specific area plans, ACHD will require that a phasing analysis be submitted with the initial TIS or with the first preliminary plat submittal. This phasing analysis shall include the size and type of the proposed land uses within each phase and the anticipated mitigation measures necessary with each phase. Prior to the approval for each subsequent phase of the development, the applicant shall submit an updated TIS. The updated TIS shall include information from the built environment to date including actual traffic counts and actual trip capture; projected traffic for the current phase and anticipated trip capture based on development of applicable land uses, and necessary mitigation measures for the current phase. In addition, the updated TIS shall include updated traffic counts for the impacted roadway segments and intersections consistent with Section 7106.6.

- b. **Comments/Recommendations:** Consistent with District policy, the applicant should be required to provide an updated TIS with each phase of the development. In addition, a TIS should be required with all development applications that include a change to Master Planned Development that may alter traffic impact projections at the sole discretion of ACHD. All TIS submittals, including updates to the TIS, must meet ACHD policy requirements at the time of submittal.

### 6. Aerie Way – New Arterial

The applicant has proposed to construct a new arterial roadway, Aerie Way to provide access to the site. This roadway is proposed to extend from SH-16 to intersect Deep Canyon Drive. Aerie Way is not currently shown on ACHD’s Master Street Map or planned to be constructed in the CIP and would require the applicant to acquire property from an adjacent landowner and BLM to accommodate the construction of a roadway in this location. The study assumed that this roadway would be constructed under background conditions in 2045 (under the select roadway improvement scenario). The TIS also notes that Aerie Lane would need to be constructed as a 2-lane minor arterial roadway.



ACHD is supportive of the applicant’s proposal to construct a new arterial roadway to provide access to the site, as it reduces the impacts to the existing local street network. The applicant will be responsible to acquire all of the right-of-way necessary to construct a public street through



the adjacent parcels, this includes acquiring perpetual right-of-way Grants to ACHD from the BLM, that include the entire roadway prism for Aerie Way. If the applicant is unable to obtain the right-of-way from private property owners or perpetual right-of-way easements from BLM, then the land uses proposed within the master planned community should be reevaluated and the site should be redesigned to reduce the impacts to the existing local street network. No connection to Deep Canyon Drive will be considered until Aerie Way is constructed and provides access to the site.

## 7. Deep Canyon Drive

Deep Canyon Drive is an existing rural residential local roadway which was constructed as part of Hillsdale Estates Subdivision, which first final platted in 1995. This roadway is improved with 30-feet of pavement, gravel or grass shoulders, barrow ditches and no pedestrian improvements, consistent with ACHD's policies for rural residential roadways in effect at the time of development.

District policy 7207.3.1 Average Daily Traffic (ADT), limits the average daily traffic on new and existing local streets to less than 2,000 trips per day and reads as follows: *ADT on new and existing local streets should typically be less than 2,000. This ADT applies to both existing and new streets. For new streets that are stubbed to connect to adjacent land that is not fully developed, the allowable ADT for the new street will typically be no more than 1,000 ADT, to accommodate future additional traffic from the adjacent land, depending on the location and type of the stub street and the location and size of the adjacent undeveloped land. When stub streets are connected and properties fully developed, local streets should not exceed 2,000 ADT.*

Based on the information provided in the TIS and concept plan, the applicant has proposed to use Deep Canyon Drive to provide primary access to the site. Deep Canyon currently has an average daily traffic count of 1,260.

The TIS included a scenario which assumed the construction of some key roadway connections, including a new arterial roadway, Aerie Way, which is proposed to extend from SH-16 to intersect Deep Canyon Drive. Aerie Way is not currently shown on ACHD's Master Street Map or planned to be constructed in the CIP and would require the applicant to acquire property from an adjacent landowner and BLM to accommodate the construction of a roadway in this location. The study assumed that this roadway would be constructed under background conditions in 2045 and that Deep Canyon would be disconnected from SH-16 to maintain local traffic volumes.

Without the construction of Aerie Way, Deep Canyon Drive is anticipated to carry an ADT of over 3,800 under phase 1 total traffic conditions and over 7,000 trips per day under total traffic conditions for build-out of the proposed development; far exceeding ACHD's threshold of 2,000 trips per day on local roadways.

To mitigate traffic volumes on Deep Canyon Drive, the applicant is proposing to re-classify from the rural local, to a collector roadway, to allow additional capacity based on definition only. ACHD does not accept this as mitigation and will not reclassify Deep Canyon Drive to a collector roadway to accommodate traffic generated by the proposed development. Widening of Deep Canyon Drive will also not be considered as acceptable mitigation, as this roadway was constructed to rural local residential street standards and has limited right-of-way, making improvements infeasible anyway.

To reduce the impacts of this development on Deep Canyon Drive and to ensure that traffic volumes remain below 2,000 vehicle trips per day, ACHD will not consider a connection to Deep Canyon Drive until Aerie Way is constructed and provides access to the site. ACHD recommends that the City of Star include this in the development agreement. See finding 13.



Once Aerie way is constructed and provides access to the site ACHD may consider allowing a connection to Deep Canyon Drive based on information provided in updated traffic impact studies, site design, and any other information applicable at the time of a future development applications.

## **8. Lanktree Gulch Road**

Lanktree Gulch Road is an existing rural residential local roadway which was constructed as part of Hillsdale Estates Subdivision and Monument Ridge Ranch, which first final platted starting in 1993. This roadway is improved with either 24 or 30-feet of pavement (depending on location), gravel or grass shoulders, barrow ditches and no pedestrian improvements, consistent with ACHD's policies for rural residential roadways in effect at the time of development.

*District policy 7207.3.1 Average Daily Traffic (ADT), limits the average daily traffic on new and existing local streets to less than 2,000 trips per day and reads as follows: ADT on new and existing local streets should typically be less than 2,000. This ADT applies to both existing and new streets. For new streets that are stubbed to connect to adjacent land that is not fully developed, the allowable ADT for the new street will typically be no more than 1,000 ADT, to accommodate future additional traffic from the adjacent land, depending on the location and type of the stub street and the location and size of the adjacent undeveloped land. When stub streets are connected and properties fully developed, local streets should not exceed 2,000 ADT.*

Based on the information provided in the TIS and concept plan, the applicant has proposed to use Lanktree Gulch Road to access the site at full build out. Lanktree Gulch Road currently has an average daily traffic count of 740 trips per day, which is within ACHD's policy thresholds. Under 2045 total traffic conditions, Landtree Gulch is anticipated to carry an ADT of 2,760 trips per day exceeding ACHD's threshold of 2,000 trips per day on local roadways.

To mitigate traffic volumes on Lanktree Gulch Road, the applicant has proposed to re-classify from a rural local, to a collector roadway, to allow additional capacity based on definition only. ACHD does not accept this as mitigation and will not reclassify Lanktree Gulch Road to a collector roadway to accommodate traffic generated by the proposed development. Widening of Lanktree Gulch Road will also not be considered as acceptable mitigation, as this roadway was to rural local residential street standards and has limited right-of-way, making improvements infeasible anyway.

ACHD recommends that the site be redesigned to reduce the impacts to Lanktree Gulch Road, or the density of the proposed land uses be reduced to ensure that Lanktree Gulch remains within local street thresholds. This will be verified through future traffic impact studies and ACHD may require changes to development applications to ensure Lanktree Gulch Road remains at less than 2,000 trips per day.

## **9. New East/West Collector Roadway**

The concept plan provided in the annexation and rezone application and in the TIS shows a new east/west collector roadway that is proposed to intersect Deep Canyon Drive/Aerie Way and extend west thought the site to intersect Can Ada Road. This roadway is not shown on ACHD's Master Street Map.



\*Proposed collector in Red

If, the new east/west collector is proposed to be a public street, then it should be designed and constructed meeting ACHD policies and standards, as no cross section or phasing plan was provided as part of this application. The design and construction of the collector roadway will be evaluated as part of a future preliminary plat application and the collector will be restricted at Deep Canyon Drive until Aerie Way is constructed and provides access to the site.

Based on the concept plan, this roadway is proposed to provide access to the first phase of the development including the golf course. The City of Star has indicated that the golf course will be approved under the development agreement included as part of this application, without a subsequent development application. Because of this ACHD is unable to establish conditions of approval for the new collector roadway or any public streets proposed to provide access to the golf course. To provide access to the golf course, the applicant should be required to apply for a driveway approach permit for a driveway or private road onto Can Ada Road to provide access to the site. ACHD will not approve or accept any new public street within the site without the review and approval through a preliminary plat application. See finding 12.

## 10. Can-Ada Road

Can-Ada Road is currently classified as a minor arterial roadway between SH-44 and New Hope Road and as a collector roadway from New Hope Road north to Purple Sage Drive in Canyon County. This roadway is on the Ada/Canyon County line and this roadway is under the jurisdiction of both ACHD and Canyon Highway District 4. This roadway is generally improved with 2 travel lanes, gravel shoulders, barrow ditches, and limited sidewalks and turn lanes between SH-44 and the site.

The TIS recommends the reclassification of the collector portion of Can-Ada Road (between New Hope Road and Purple Sage Road) to a minor arterial roadway to accommodate the site generated traffic. ACHD is supportive of this proposal and recommends that the City of Star work with COMPASS and Canyon Highway District 4 to facilitate the reclassification of roadway.

Improvements to Can-Ada Road, adjacent to, and off-site, will be evaluated as part of future traffic impact studies and preliminary plat applications. ACHD also recommends that the site be designed to put more traffic on Can-Ada Road, a minor arterial/collector roadway instead of impacting the existing local residential street network.



## **11. Roundabouts**

The concept plans show the construction of 2 roundabouts, one dog bone style roundabout at the Aerie Way/Deep Canyon/new collector intersection and a standard roundabout at the Can-Ada/Purple Sage/new collector intersection. The roundabouts, or other improvements at this intersection should be constructed by the applicant when warranted. ACHD has concerns regarding the constructability of roundabouts in the proposed locations due to the topography in the area. Any roundabouts or any other intersection improvement should be designed to meet all of ACHD's policies and standards.

## **12. Public Streets**

The concept plan for the proposed development includes a network of new streets to serve the site. ACHD is not approving any new public streets or approaches onto existing public streets as part of this annexation and rezone application and will not approve any new public streets without a preliminary plat application. All public streets should be designed and constructed to meet ACHD's policies and standards, and pre-application meetings are recommended., All new right-of-way to support the construction of new public streets within the development should be dedicated as part of the final plat process, as individual warranty deeds will not be accepted within the master planned development area.

## **13. Recommendation to City of Star/Recommended Conditions**

ACHD is a recommending body for an annexation and rezone application and is not party to the City of Star's Development Agreement with the applicant. The City of Star has indicated that the golf course will be approved under the development agreement included as part of this application and ACHD is unclear of when additional development additional development applications including, but not limited to preliminary plats, conditional use permit, and design review applications would be transmitted for review and comment. Because of this ACHD recommends that the City of Star include the following site specific conditions as part of their action on the annexation and rezone application and development agreement OR that the City require development applications for all future phases that will be transmitted to ACHD for review and approval, allowing ACHD to establish site specific conditions of approval at that time.

- 1. No connection (public or private) to Deep Canyon Drive will be considered until Aerie Way is constructed and open to provide access to the site.*
- 2. To provide access to the golf course, apply for a driveway approach permit for a driveway or private road onto Can Ada Road to provide access to the site.*
- 3. ACHD will not approve or accept any new public streets within the site without the review and approval through a preliminary plat application. All new public streets shall be designed and constructed to ACHD standards.*
- 4. All new right-of-way to support the construction of new public streets within the development shall be dedicated as part of the final plat process. Individual warranty deeds for right-of-way dedication will not be accepted within the master planned development area.*
- 5. City of Star shall work with COMPASS and Canyon Highway District 4 to facilitate the reclassification of Can-Ada Road from New Hope Road north to Purple Sage Road as a minor arterial roadway.*
- 6. The applicant shall be required to make all of the improvements needed to mitigate the traffic impacts of the development, except for local streets, as outlined in the executive summary of the traffic impact study (attachment 3).*



- a. *ACHD will provide a detailed analysis of when improvements are warranted as part of the review of future preliminary plat applications.*
7. *Provide the City of Star a detailed phasing plan which identifies the number of units or commercial square footage proposed for each phase, and where access is proposed.*
  - a. *ACHD will review the phasing plan and provide comments to the City of Star based on the trip thresholds and proposed access locations.*
8. *If roadway improvements assumed to be constructed under the select improvements scenario in the TIS are not constructed when needed to serve the site then the applicant shall submit a revised master plan application that reduces the density to keep the exiting roadway network at acceptable level of service planning thresholds, based on ACHD policy.*

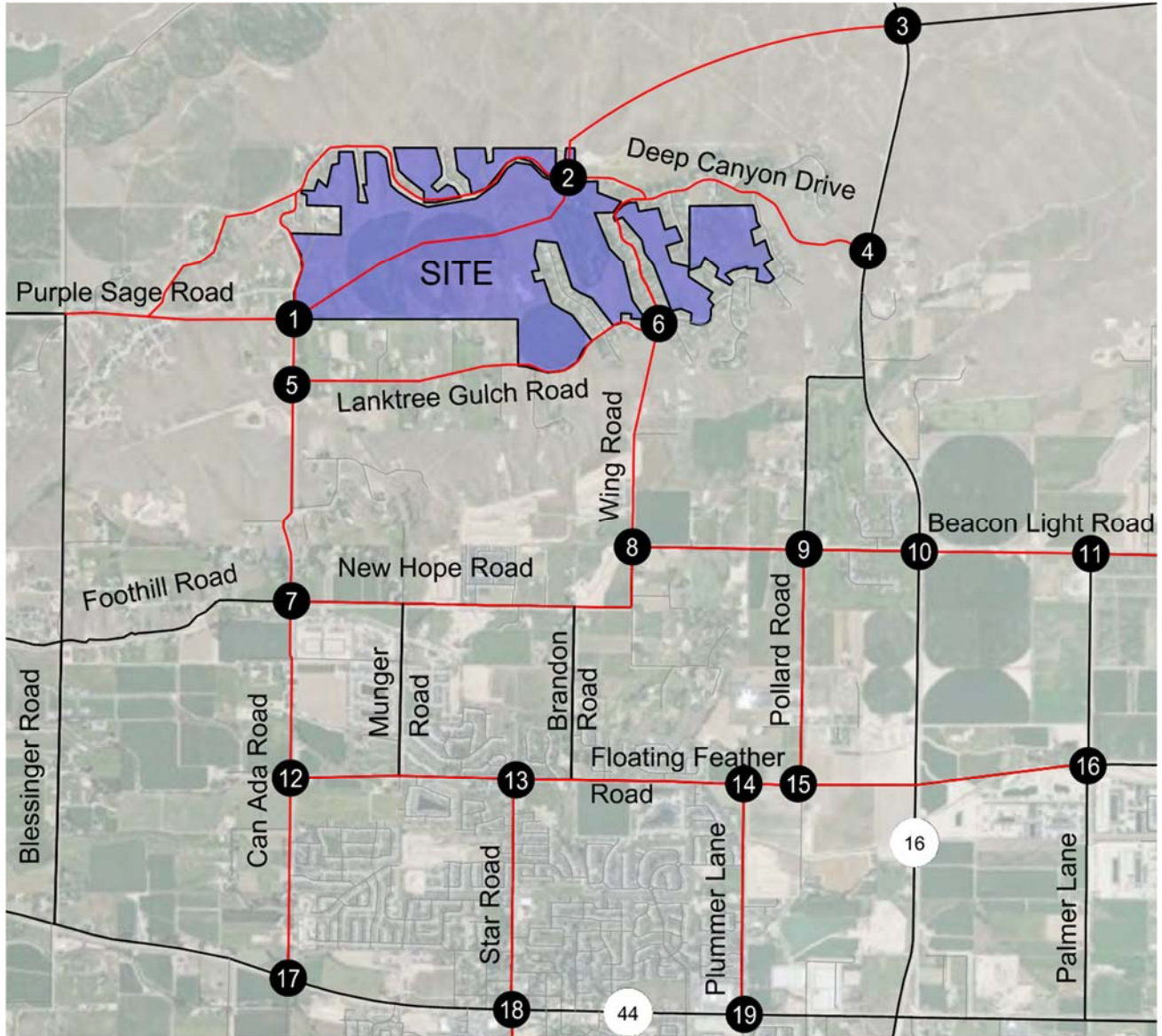
#### **14. Summary/Disclaimer**

- a. Below is a summary of the primary issues that will be required to be addressed with future preliminary plats:
  - i. Traffic Impact Studies –Updated traffic impact studies will be required with each phase of the development to verify assumptions and establish conditions.
  - ii. Disclaimer: No waiver or modification of policy is approved or recommended unless specifically called out by policy section and specifically approved in this report. Additional requirements may be required at each preliminary plat phase.

#### **Attachments**

1. Vicinity Map
2. Concept Plan Phase 1
3. Concept Plan Build Out
4. TIS Executive Summary

# Vicinity Map





Concept Plan – Phase 1



# Concept Plan – Build Out



# EXECUTIVE SUMMARY

Willowbrook Development Inc. is proposing to develop the Willow Brook Golf Community, a mixed-use development situated on approximately 720 acres of currently vacant land in Ada County, Idaho. The site is loosely bounded by SH 16 to the east, Can Ada Road to the west, Deep Canyon Drive to the north, and Lanktree Gulch Road to the south. The development will fill areas of vacant land around existing residential developments. Currently the site is in unincorporated Ada County but will be annexed into the City of Star upon development approval.

The Willow Brook Golf Community will be constructed in phases throughout the next 20+ years. The first phase of construction will consist of the following land uses:

- 285 Single Family Houses
- 45 Townhomes
- 18-hole Public Golf Course

Full buildout of the Willow Brook Golf Community will consist of the following land uses:

- 948 Single Family Houses
- 146 Townhomes
- 75,000 Sq. Ft. of Commercial Shopping Plaza
- 18-hole Public Golf Course

Access to the development is proposed via Can Ada Road, Purple Sage Road, Deep Canyon Drive, and Lanktree Gulch Road. Additionally, there are potential planned access connections at Wing Road and Aerie Way. Due to the infill nature of the development, site accesses are not exclusive to the proposed development and will carry traffic from adjacent existing residences. The main internal collector of the development will connect Deep Canyon Drive to Can Ada Road. The proposed site plan for phase 1 of development is shown in Figure 2. The site plan for full buildout of the Willow Brook Golf Community is shown in Figure 3.

The development is planned to be fully built-out by the year 2045, with phase 1 being completed by 2030. The TIS addresses the existing traffic conditions, background (2030 & 2045) traffic conditions, and the development's impacts in the build-out years (2030 & 2045) and necessary mitigation measures.

The TIS for Willow Brook Golf Community resulted in the following findings and recommendations.

## FINDINGS

### EXISTING CONDITIONS

The study evaluated 19 off-site intersections and 23 roadway segments during the AM and PM peak period of a typical weekday. All study intersections and roadway segments were found to meet ACHD and ITD operating standards under 2022 existing conditions during the AM and PM peak hours.

### YEAR 2030 BACKGROUND CONDITIONS

The 2030 phase 1 portion of the study evaluated 5 off-site intersections and 8 roadway segments during the AM and PM peak period of a typical weekday.

All study intersections were found to meet ACHD and ITD operating standards under 2030 background conditions during the AM and PM peak hours except for:

■ **SH 44 & Can Ada Road**

- The southbound approach operates over capacity and at LOS F during the weekday AM and PM peak hours.
- This intersection is in the Mid-Star CIP as a future traffic signal to be constructed by 2025. ITD's SH 44 Corridor Plan shows this intersection as a future RCUT with SH 44 widened to 4 lanes. The City of Star is leading a project that will widen SH 44 to the east of Can Ada Road in 2023
- The CHD4 identified improvement of a traffic signal with left and right turn lanes will serve as acceptable mitigation for the intersection. Alternatively, the ITD identified improvement of an RCUT will also serve as acceptable mitigation for the intersection.

All ACHD study roadway segments operate at acceptable levels of service under 2030 background conditions except for:

■ **Beacon Light Road (SH 16 to Palmer)**

- The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
- The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
- To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.

## YEAR 2045 BACKGROUND CONDITIONS

The 2045 background conditions analysis evaluated 19 off-site intersections and 23 roadway segments during the AM and PM peak period of a typical weekday assuming no background roadway improvements were completed.

The following study intersections were found to exceed ACHD and ITD operating standards under 2045 background conditions during the AM and/or PM peak hours:

■ **Beacon Light Road & Pollard Road**

- The minor street approaches operate over capacity and at LOS F during the weekday PM peak hour.
- The intersection is programmed in the ACHD CIP as a future single-lane roundabout to be constructed in 2036-2040. This improvement does not bring the intersection to within ACHD operating standards.
- A multi-lane roundabout with 2 lanes on Beacon Light Road will serve as acceptable mitigation for the intersection. Alternatively, a traffic signal with left turn lanes and a westbound right turn lane will also serve as acceptable mitigation for the intersection.

■ **Beacon Light Road & SH 16**

- The intersection operates over capacity and at LOS E during the weekday AM and PM peak hours.
- The Spring Valley development was conditioned with making capacity improvements to this intersection.
- Widening SH 16 at the intersection and adding a westbound right turn overlap will serve as acceptable mitigation for the intersection.

■ **Beacon Light Road & Palmer Lane**

- The northbound approach operates over capacity and at LOS F during the weekday PM peak hour.
- The intersection is programmed in the ACHD CIP as a future single-lane roundabout to be constructed in 2036-2040. This improvement does not bring the intersection to within ACHD operating standards.
- A multi-lane roundabout with 2 lanes on Beacon Light Road will serve as acceptable mitigation for the intersection. Alternatively, a traffic signal with left and right turn lanes and Beacon Light Road widened to 2 through lanes will also serve as acceptable mitigation for the intersection.

■ **Floating Feather Road & Star Road**

- The northbound approach operates over capacity and at LOS F during the weekday AM and PM peak hours.
- The intersection is programmed in the ACHD CIP as a future single-lane roundabout to be constructed in 2036-2040.
- The ACHD identified improvement of a single-lane roundabout will serve as acceptable mitigation for the intersection. Alternatively, a traffic signal with left turn lanes will also serve as acceptable mitigation for the intersection.

■ **Floating Feather Road & Plummer Road**

- The northbound approach operates over capacity and at LOS F during the weekday PM peak hour.
- The intersection is programmed in the ACHD CIP as a future single-lane roundabout to be constructed in 2036-2040.
- The ACHD identified improvement of a single-lane roundabout will serve as acceptable mitigation for the intersection. Alternatively, a traffic signal with left turn lanes will also serve as acceptable mitigation for the intersection.

■ **SH 44 & Can Ada Road**

- The southbound approach operates over capacity and at LOS F during the weekday AM and PM peak hours.
- This intersection is in the Mid-Star CIP as a future traffic signal to be constructed by 2025. ITD's SH 44 Corridor Plan shows this intersection as a future RCUT with SH 44 widened to 4 lanes. The City of Star is leading a project that will widen SH 44 to the east of Can Ada Road in 2023.
- The CHD4 identified improvement of a traffic signal with left and right turn lanes will serve as acceptable mitigation for the intersection. Alternatively, the ITD identified improvement of an RCUT will also serve as acceptable mitigation for the intersection.

■ **SH 44 & Star Road**

- The intersection operates over capacity and at LOS E during the weekday AM and PM peak hours.
- This intersection is in the ACHD CIP to have the signal replaced/modified and approaches widened. The lane configuration identified by ACHD does not fully mitigate the intersection.
- Widening SH 44 at the intersection and adding dual northbound left turn lanes will serve as acceptable mitigation for the intersection.

■ **SH 44 & Plummer Road**

- The intersection operates over capacity and at LOS F during the weekday AM and PM peak hours.
- This intersection is not currently programmed for improvements by ACHD. ITD's draft SH 44 Corridor Plan shows this intersection as signalized with SH 44 widened to 4 lanes. The lane configuration shown in the Corridor Plan does not fully mitigate the intersection.
- A traffic signal with left and right turn lanes, the eastbound and westbound approaches widened to two through lanes, and dual southbound left turn lanes will serve as acceptable mitigation for the intersection.

The following study roadway segments operate above ACHD level of service volume thresholds under 2045 background conditions:

■ **Deep Canyon Drive (Aerie Way to SH 16)**

- The segment is projected to exceed the ACHD local road ADT volume threshold.
- This segment would meet the AM and PM peak hour LOS D volume thresholds if Deep Canyon Drive were upgraded to a collector roadway.
- Constructing Aerie Way and the Wing Road extension would bring Deep Canyon Drive to within the ACHD local road ADT threshold as shown in the 2045 background (with select roadway improvements) conditions scenario.

■ **Lanktree Gulch Road (Can Ada to Wing)**

- The segment is projected to exceed the ACHD local road ADT volume threshold.
- This segment would meet the AM and PM peak hour LOS D volume thresholds if Lanktree Gulch Road were upgraded to a collector roadway.

■ **Wing Road (Lanktree Gulch to Beacon Light)**

- The segment is projected to exceed the ACHD local road ADT volume threshold.
- This segment would meet the AM and PM peak hour LOS D volume thresholds if Wing Road were upgraded to a collector roadway.

■ **Beacon Light Road (Wing to Pollard)**

- The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
- The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
- To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.

■ **Beacon Light Road (Pollard to SH 16)**

- The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
- The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
- To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.

■ **Beacon Light Road (SH 16 to Palmer)**

- The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
- The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
- To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.
- **Beacon Light Road (Palmer to Linder)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
  - The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
  - To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.
- **Pollard Road (Beacon Light to Floating Feather)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
  - The roadway segment is not currently listed in the ACHD CIP to be widened.
  - To bring this segment to within standards, Pollard Road would need to be widened to a 3-lane section.
- **Floating Feather Road (Star to Plummer)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
  - The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
  - To bring this segment to within standards, Floating Feather Road would need to be widened to a 5-lane section.
- **Star Road (Floating Feather to SH 44)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
  - The roadway segment is not currently listed in the ACHD CIP to be widened.
  - To bring this segment to within standards, Star Road would need to be widened to a 5-lane section.
- **Star Road (SH 44 to Joplin)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
  - The roadway segment is listed in the ACHD CIP to be widened to a 5-lane section in the 2031-2035 timeframe. This would bring the segment to within standards.
- **Plummer Road (Floating Feather to SH 44)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
  - The roadway segment is not currently listed in the ACHD CIP to be widened.

- To bring this segment to within standards, Plummer Road would need to be widened to a 3-lane section.

## YEAR 2045 BACKGROUND (WITH SELECT ROADWAY IMPROVEMENTS) CONDITIONS

The 2045 background (with select roadway improvements) conditions analysis evaluated 19 off-site intersections and 23 roadway segments during the AM and PM peak period of a typical weekday assuming select background roadway improvements were constructed. The assumed improvements include:

- Floating Feather Road constructed between Munger Road and Can Ada Road
- Floating Feather Road realignment constructed between Pollard Road and Palmer Lane
- Wing Road constructed between Beacon Light Road and Lanktree Gulch Road
- Aerie Way constructed between SH 16 and Deep Canyon Drive

The following study intersections were found to exceed ACHD and ITD operating standards under 2045 background (with select roadway improvements) conditions during the AM and/or PM peak hours:

### ■ **Beacon Light Road & Pollard Road**

- The minor street approaches operate over capacity and at LOS F during the weekday PM peak hour.
- The intersection is programmed in the ACHD CIP as a future single-lane roundabout to be constructed in 2036-2040. This improvement does not bring the intersection to within ACHD operating standards.
- A multi-lane roundabout with 2 lanes on Beacon Light Road will serve as acceptable mitigation for the intersection. Alternatively, a traffic signal with left turn lanes and a westbound right turn lane will also serve as acceptable mitigation for the intersection.

### ■ **Beacon Light Road & SH 16**

- The intersection operates over capacity and at LOS E during the weekday AM and PM peak hours.
- The Spring Valley development was conditioned with making capacity improvements to this intersection.
- Widening SH 16 at the intersection and adding a westbound right turn overlap will serve as acceptable mitigation for the intersection.

### ■ **Beacon Light Road & Palmer Lane**

- The northbound approach operates over capacity and at LOS F during the weekday PM peak hour.
- The intersection is programmed in the ACHD CIP as a future single-lane roundabout to be constructed in 2036-2040. This improvement does not bring the intersection to within ACHD operating standards.
- A multi-lane roundabout with 2 lanes on Beacon Light Road will serve as acceptable mitigation for the intersection. Alternatively, a traffic signal with left and right turn lanes and Beacon Light Road widened to 2 through lanes will also serve as acceptable mitigation for the intersection.

### ■ **Floating Feather Road & Star Road**

- The northbound approach operates over capacity and at LOS F during the weekday AM and PM peak hours.



- The intersection is programmed in the ACHD CIP as a future single-lane roundabout to be constructed in 2036-2040.
- The ACHD identified improvement of a single-lane roundabout will serve as acceptable mitigation for the intersection. Alternatively, a traffic signal with left turn lanes will also serve as acceptable mitigation for the intersection.
- **Floating Feather Road & Plummer Road**
  - The northbound approach operates over capacity and at LOS F during the weekday PM peak hour.
  - The intersection is programmed in the ACHD CIP as a future single-lane roundabout to be constructed in 2036-2040.
  - The ACHD identified improvement of a single-lane roundabout will serve as acceptable mitigation for the intersection. Alternatively, a traffic signal with left turn lanes will also serve as acceptable mitigation for the intersection.
- **SH 44 & Can Ada Road**
  - The southbound approach operates over capacity and at LOS F during the weekday AM and PM peak hours.
  - This intersection is in the Mid-Star CIP as a future traffic signal to be constructed by 2025. ITD's SH 44 Corridor Plan shows this intersection as a future RCUT with SH 44 widened to 4 lanes. The City of Star is leading a project that will widen SH 44 to the east of Can Ada Road in 2023.
  - The CHD4 identified improvement of a traffic signal with left and right turn lanes and SH 44 widened to 4 lanes will serve as acceptable mitigation for the intersection. Alternatively, the ITD identified improvement of an RCUT will also serve as acceptable mitigation for the intersection.
- **SH 44 & Star Road**
  - The intersection operates over capacity and at LOS E during the weekday AM and PM peak hours.
  - This intersection is in the ACHD CIP to have the signal replaced/modified and approaches widened. The lane configuration identified by ACHD does not fully mitigate the intersection.
  - Widening SH 44 at the intersection and adding dual northbound left turn lanes will serve as acceptable mitigation for the intersection.
- **SH 44 & Plummer Road**
  - The intersection operates over capacity and at LOS F during the weekday AM and PM peak hours.
  - This intersection is not currently programmed for improvements by ACHD. ITD's draft SH 44 Corridor Plan shows this intersection as signalized with SH 44 widened to 4 lanes. The lane configuration shown in the Corridor Plan does not fully mitigate the intersection.
  - A traffic signal with left and right turn lanes, the eastbound and westbound approaches widened to two through lanes, and dual southbound left turn lanes will serve as acceptable mitigation for the intersection.

The following study roadway segments operate above ACHD level of service volume thresholds under 2045 background (with select roadway improvements) conditions:

- **Wing Road (Lanktree Gulch to Beacon Light)**
  - The segment is projected to exceed the ACHD local road ADT volume threshold.

- This segment would meet the AM and PM peak hour LOS D volume thresholds if Wing Road were upgraded to a collector roadway.
- **Beacon Light Road (Wing to Pollard)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
  - The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
  - To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.
- **Beacon Light Road (Pollard to SH 16)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
  - The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
  - To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.
- **Beacon Light Road (SH 16 to Palmer)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
  - The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
  - To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.
- **Beacon Light Road (Palmer to Linder)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
  - The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
  - To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.
- **Pollard Road (Beacon Light to Floating Feather)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
  - The roadway segment is not currently listed in the ACHD CIP to be widened.
  - To bring this segment to within standards, Pollard Road would need to be widened to a 3-lane section.
- **Floating Feather Road (Star to Plummer)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
  - The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.

- To bring this segment to within standards, Floating Feather Road would need to be widened to a 5-lane section.
- **Floating Feather Road (Plummer to Pollard)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
  - The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe. This would bring the segment to within standards.
- **Star Road (Floating Feather to SH 44)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
  - The roadway segment is not currently listed in the ACHD CIP to be widened.
  - To bring this segment to within standards, Star Road would need to be widened to a 5-lane section.
- **Star Road (SH 44 to Joplin)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
  - The roadway segment is listed in the ACHD CIP to be widened to a 5-lane section in the 2031-2035 timeframe. This would bring the segment to within standards.
- **Plummer Road (Floating Feather to SH 44)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
  - The roadway segment is not currently listed in the ACHD CIP to be widened.
  - To bring this segment to within standards, Plummer Road would need to be widened to a 3-lane section.

## TRIP GENERATION & DISTRIBUTION

- The golf course only of the proposed Willow Brook Golf Community is estimated to generate a total of 526 daily net new trip ends, of these, 30 are estimated to occur in the weekday a.m. peak hour (24 inbound / 6 outbound), and 52 are estimated to occur in the weekday p.m. peak hour (27 inbound / 25 outbound).
- Phase 1 of the proposed Willow Brook Golf Community is estimated to generate a total of 3,535 daily net new trip ends, of these, 260 are estimated to occur in the weekday a.m. peak hour (83 inbound / 177 outbound), and 358 are estimated to occur in the weekday p.m. peak hour (220 inbound / 138 outbound).
- Full buildout of the proposed Willow Brook Golf Community is estimated to generate a total of 12,821 daily net new trip ends, of these, 789 are estimated to occur in the weekday a.m. peak hour (262 inbound / 527 outbound), and 1,097 are estimated to occur in the weekday p.m. peak hour (658 inbound / 439 outbound).
- The distribution pattern for site-generated trips was developed by evaluating a select zone analysis from COMPASS' regional travel demand model.

## YEAR 2030 TOTAL TRAFFIC CONDITIONS

The 2030 phase 1 portion of the study evaluated 5 off-site intersections and 8 roadway segments during the AM and PM peak period of a typical weekday with the inclusion of phase 1 trips from the Willow Brook Golf Community.

All study intersections were found to meet ACHD and ITD operating standards under 2030 background conditions during the AM and PM peak hours except for:

### ■ **SH 44 & Can Ada Road**

- The southbound approach operates over capacity and at LOS F during the weekday AM and PM peak hours.
- This intersection is in the Mid-Star CIP as a future traffic signal to be constructed by 2025. ITD's SH 44 Corridor Plan shows this intersection as a future RCUT with SH 44 widened to 4 lanes. The City of Star is leading a project that will widen SH 44 to the east of Can Ada Road in 2023.
- The CHD4 identified improvement of a traffic signal with left and right turn lanes will serve as acceptable mitigation for the intersection. Alternatively, the ITD identified improvement of an RCUT will also serve as acceptable mitigation for the intersection.

All ACHD study roadway segments operate at acceptable levels of service under 2030 total traffic conditions except for:

### ■ **Deep Canyon Drive (Purple Sage to SH 16)**

- The segment is projected to exceed the ACHD local road ADT volume threshold.
- This segment would meet the AM and PM peak hour LOS D volume thresholds if Deep Canyon Drive were upgraded to a collector roadway.
- To limit through traffic on this local road, Deep Canyon Drive would need to be disconnected from SH 16. This option is discussed in the 2045 total traffic (with select roadway improvements) conditions scenario.

### ■ **Beacon Light Road (SH 16 to Palmer)**

- The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
- The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
- To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.

## YEAR 2045 TOTAL TRAFFIC CONDITIONS

The 2045 total traffic conditions analysis evaluated 19 off-site intersections and 23 roadway segments during the AM and PM peak period of a typical weekday assuming no background roadway improvements were completed and includes site traffic from full buildout of the Willow Brook Golf Community.

The following study intersections were found to exceed ACHD and ITD operating standards under 2045 total traffic conditions during the AM and/or PM peak hours:

### ■ **Purple Sage Road & Can Ada Road**

- The minor street approaches operate over capacity and at LOS F during the weekday PM peak hour.

- The Mid-Star CIP includes adding turn lanes to this intersection in the 2030-2040 timeframe, but that will not mitigate the intersection in this scenario.
- A single lane roundabout or a traffic signal with left turn lanes will serve as acceptable mitigation for the intersection.
- **Deep Canyon Drive & SH 16**
  - The eastbound approach operates over capacity and at LOS F during the weekday AM peak hour.
  - The future configuration of this section of SH 16 is currently being determined by an ITD Corridor Plan. A traffic signal with one through lane in the northbound and southbound direction does not mitigate the intersection.
  - A traffic signal with left and right turn lanes and SH 16 widened to two through lanes in each direction will serve as acceptable mitigation for the intersection.
- **Beacon Light Road & Pollard Road**
  - No Willow Brook site trips are assigned to this intersection under 2045 total traffic conditions. Therefore, the mitigations needed at this intersection are the same as identified in 2045 background conditions.
- **Beacon Light Road & SH 16**
  - The intersection operates over capacity and at LOS E during the weekday AM and PM peak hours.
  - The Spring Valley development was conditioned with making capacity improvements to this intersection.
  - Widening SH 16 at the intersection and adding a second westbound right turn lane will serve as acceptable mitigation for the intersection.
- **Beacon Light Road & Palmer Lane**
  - The northbound approach operates over capacity and at LOS F during the weekday PM peak hour.
  - The intersection is programmed in the ACHD CIP as a future single-lane roundabout to be constructed in 2036-2040. This improvement does not bring the intersection to within ACHD operating standards.
  - A multi-lane roundabout with 2 lanes on Beacon Light Road will serve as acceptable mitigation for the intersection. Alternatively, a traffic signal with left and right turn lanes and Beacon Light Road widened to 2 through lanes will also serve as acceptable mitigation for the intersection.
- **Floating Feather Road & Star Road**
  - No Willow Brook site trips are assigned to this intersection under 2045 total traffic conditions. Therefore, the mitigations needed at this intersection are the same as identified in 2045 background conditions.
- **Floating Feather Road & Plummer Road**
  - No Willow Brook site trips are assigned to this intersection under 2045 total traffic conditions. Therefore, the mitigations needed at this intersection are the same as identified in 2045 background conditions.
- **SH 44 & Can Ada Road**
  - The southbound approach operates over capacity and at LOS F during the weekday AM and PM peak hours.

- This intersection is in the Mid-Star CIP as a future traffic signal to be constructed by 2025. ITD's SH 44 Corridor Plan shows this intersection as a future RCUT with SH 44 widened to 4 lanes. The City of Star is leading a project that will widen SH 44 to the east of Can Ada Road in 2023. The ITD identified improvement of an RCUT does not bring the intersection to within ACHD or ITD operating standards.
- The CHD4 identified improvement of a traffic signal with left and right turn lanes and SH 44 widened to 4 lanes will serve as acceptable mitigation for the intersection.
- **SH 44 & Star Road**
  - The intersection operates over capacity and at LOS E during the weekday AM and PM peak hours.
  - This intersection is in the ACHD CIP to have the signal replaced/modified and approaches widened. The lane configuration identified by ACHD does not fully mitigate the intersection.
  - Widening SH 44 at the intersection and adding dual northbound left turn lanes will serve as acceptable mitigation for the intersection.
- **SH 44 & Plummer Road**
  - The intersection operates over capacity and at LOS F during the weekday AM and PM peak hours.
  - This intersection is not currently programmed for improvements by ACHD. ITD's draft SH 44 Corridor Plan shows this intersection as signalized with SH 44 widened to 4 lanes. The lane configuration shown in the Corridor Plan does not fully mitigate the intersection.
  - A traffic signal with left and right turn lanes, the eastbound and westbound approaches widened to two through lanes, and dual southbound left turn lanes will serve as acceptable mitigation for the intersection.

The following study roadway segments receive site traffic and operate above ACHD level of service volume thresholds under 2045 total traffic conditions:

- **Deep Canyon Drive (Aerie to SH 16)**
  - The segment is projected to exceed the ACHD local road ADT volume threshold.
  - This segment would meet the AM and PM peak hour LOS D volume thresholds if Deep Canyon Drive were upgraded to a collector roadway.
  - To limit through traffic on this local road, Deep Canyon Drive would need to be disconnected from SH 16. This option is discussed in the total traffic (with select roadway improvements) conditions scenario.
- **Lanktree Gulch Road (Can Ada to Wing)**
  - The segment is projected to exceed the ACHD local road ADT volume threshold.
  - This segment would meet the AM and PM peak hour LOS D volume thresholds if Lanktree Gulch Road were upgraded to a collector roadway.
- **Purple Sage Road (Blessinger to Can Ada)**
  - The segment is projected to exceed the CHD4 LOS D volume threshold for collectors in the PM peak hour.
  - To bring this segment to within standards, Purple Sage Road would need to be widened to a 3-lane section.
- **Can Ada Road (Purple Sage to Lanktree Gulch)**

- The segment is projected to exceed the ACHD LOS D volume threshold for collectors in the PM peak hour.
- To bring this segment to within standards, Can Ada Road can be designated as a minor arterial, which it is already classified as between SH 44 and New Hope Road.
- **Can Ada Road (Lanktree Gulch to New Hope)**
  - The segment is projected to exceed the ACHD LOS D volume threshold for collectors in the PM peak hour.
  - To bring this segment to within standards, Can Ada Road can be designated as a minor arterial, which it is already classified as between SH 44 and New Hope Road.
- **Beacon Light Road (SH 16 to Palmer)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
  - The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
  - To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.
- **Beacon Light Road (Palmer to Linder)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
  - The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
  - To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.
- **Star Road (SH 44 to Joplin)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
  - The roadway segment is listed in the ACHD CIP to be widened to a 5-lane section in the 2031-2035 timeframe. This would bring the segment to within standards.

## YEAR 2045 TOTAL TRAFFIC (WITH SELECT ROADWAY IMPROVEMENTS) CONDITIONS

The 2045 total traffic (with select roadway improvements) conditions analysis evaluated 19 off-site intersections and 23 roadway segments during the AM and PM peak period of a typical weekday assuming select background roadway improvements were constructed and includes site traffic from full buildout of the Willow Brook Golf Community. The assumed background improvements include:

- Floating Feather Road constructed between Munger Road and Can Ada Road
- Floating Feather Road realignment constructed between Pollard Road and Palmer Lane
- Wing Road constructed between Beacon Light Road and Lanktree Gulch Road
- Aerie Way constructed between SH 16 and Deep Canyon Drive

The following study intersections were found to exceed ACHD and ITD operating standards under 2045 total traffic (with select roadway improvements) conditions during the AM and/or PM peak hours:

- **Purple Sage Road & Can Ada Road**

- The minor street approaches operate over capacity and at LOS F during the weekday PM peak hour.
  - The Mid-Star CIP includes adding turn lanes to this intersection in the 2030-2040 timeframe, but that will not mitigate the intersection in this scenario.
  - A single lane roundabout or a traffic signal with left turn lanes will serve as acceptable mitigation for the intersection.
- **Beacon Light Road & Pollard Road**
- The minor street approaches operate over capacity and at LOS F during the weekday PM peak hour.
  - The intersection is programmed in the ACHD CIP as a future single-lane roundabout to be constructed in 2036-2040. This improvement does not bring the intersection to within ACHD operating standards.
  - A multi-lane roundabout with 2 lanes on Beacon Light Road will serve as acceptable mitigation for the intersection. Alternatively, a traffic signal with left turn lanes and a westbound right turn lane will also serve as acceptable mitigation for the intersection.
- **Beacon Light Road & SH 16**
- The intersection operates over capacity and at LOS E during the weekday AM and PM peak hours.
  - The Spring Valley development was conditioned with making capacity improvements to this intersection.
  - Widening SH 16 at the intersection and adding a second westbound right turn lane will serve as acceptable mitigation for the intersection.
- **Beacon Light Road & Palmer Lane**
- The northbound approach operates over capacity and at LOS F during the weekday PM peak hour.
  - The intersection is programmed in the ACHD CIP as a future single-lane roundabout to be constructed in 2036-2040. This improvement does not bring the intersection to within ACHD operating standards.
  - A multi-lane roundabout with 2 lanes on Beacon Light Road will serve as acceptable mitigation for the intersection. Alternatively, a traffic signal with left and right turn lanes and Beacon Light Road widened to 2 through lanes will also serve as acceptable mitigation for the intersection.
- **Floating Feather Road & Star Road**
- The northbound approach operates over capacity and at LOS F during the weekday AM and PM peak hours.
  - The intersection is programmed in the ACHD CIP as a future single-lane roundabout to be constructed in 2036-2040.
  - The ACHD identified improvement of a single-lane roundabout will serve as acceptable mitigation for the intersection. Alternatively, a traffic signal with left turn lanes will also serve as acceptable mitigation for the intersection.
- **Floating Feather Road & Plummer Road**
- The northbound approach operates over capacity and at LOS F during the weekday PM peak hour.



- The intersection is programmed in the ACHD CIP as a future single-lane roundabout to be constructed in 2036-2040.
- The ACHD identified improvement of a single-lane roundabout will serve as acceptable mitigation for the intersection. Alternatively, a traffic signal with left turn lanes will also serve as acceptable mitigation for the intersection.
- **SH 44 & Can Ada Road**
  - The southbound approach operates over capacity and at LOS F during the weekday AM and PM peak hours.
  - This intersection is in the Mid-Star CIP as a future traffic signal to be constructed by 2025. ITD's SH 44 Corridor Plan shows this intersection as a future RCUT with SH 44 widened to 4 lanes. The City of Star is leading a project that will widen SH 44 to the east of Can Ada Road in 2023. The ITD identified improvement of an RCUT does not bring the intersection to within ACHD or ITD operating standards.
  - The CHD4 identified improvement of a traffic signal with left and right turn lanes and SH 44 widened to 4 lanes will serve as acceptable mitigation for the intersection.
- **SH 44 & Star Road**
  - The intersection operates over capacity and at LOS E during the weekday AM and PM peak hours.
  - This intersection is in the ACHD CIP to have the signal replaced/modified and approaches widened. The lane configuration identified by ACHD does not fully mitigate the intersection.
  - Widening SH 44 at the intersection and adding dual northbound left turn lanes will serve as acceptable mitigation for the intersection.
- **SH 44 & Plummer Road**
  - The intersection operates over capacity and at LOS F during the weekday AM and PM peak hours.
  - This intersection is not currently programmed for improvements by ACHD. ITD's draft SH 44 Corridor Plan shows this intersection as signalized with SH 44 widened to 4 lanes. The lane configuration shown in the Corridor Plan does not fully mitigate the intersection.
  - A traffic signal with left and right turn lanes, the eastbound and westbound approaches widened to two through lanes, and dual southbound left turn lanes will serve as acceptable mitigation for the intersection.

The following study roadway segments operate above ACHD level of service volume thresholds under 2045 background conditions:

- **Deep Canyon Drive (Aerie to SH 16)**
  - The segment is projected to exceed the ACHD local road ADT volume threshold.
  - This segment would meet the AM and PM peak hour LOS D volume thresholds if Deep Canyon Drive were upgraded to a collector roadway.
  - With the construction of Aerie Way and the Wing Road extension, Deep Canyon Drive could be disconnected from SH 16. This would limit through traffic on the roadway and would allow it to meet the ACHD local road ADT volume threshold.
  - Disconnecting Deep Canyon Drive from SH 16 will not require any additional intersection mitigations beyond those already identified under 2045 total traffic (with select roadway improvements) conditions.

■ **Purple Sage Road (Blessinger to Can Ada)**

- The segment is projected to exceed the CHD4 LOS D volume threshold for collectors in the PM peak hour.
- To bring this segment to within standards, Purple Sage Road would need to be widened to a 3-lane section.

■ **Can Ada Road (Purple Sage to Lanktree Gulch)**

- The segment is projected to exceed the ACHD LOS D volume threshold for collectors in the PM peak hour.
- To bring this segment to within standards, Can Ada Road can be designated as a minor arterial, which it is already classified as between SH 44 and New Hope Road.

■ **Can Ada Road Lanktree Gulch to New Hope)**

- The segment is projected to exceed the ACHD LOS D volume threshold for collectors in the PM peak hour.
- To bring this segment to within standards, Can Ada Road can be designated as a minor arterial, which it is already classified as between SH 44 and New Hope Road.

■ **Wing Road (Lanktree Gulch to Beacon Light)**

- The segment is projected to exceed the ACHD local road ADT volume threshold.
- This segment would meet the AM and PM peak hour LOS D volume thresholds if Wing Road were upgraded to a collector roadway.

■ **Beacon Light Road (Wing to Pollard)**

- The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
- The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
- To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.

■ **Beacon Light Road (Pollard to SH 16)**

- The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
- The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
- To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.

■ **Beacon Light Road (SH 16 to Palmer)**

- The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
- The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
- To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.

■ **Beacon Light Road (Palmer to Linder)**

- The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
- The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
- To bring this segment to within standards, Beacon Light Road would need to be widened to a 5-lane section.
- **Pollard Road (Beacon Light to Floating Feather)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
  - The roadway segment is not currently listed in the ACHD CIP to be widened.
  - To bring this segment to within standards, Pollard Road would need to be widened to a 3-lane section.
- **Floating Feather Road (Star to Plummer)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
  - The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe.
  - To bring this segment to within standards, Floating Feather Road would need to be widened to a 5-lane section.
- **Floating Feather Road (Plummer to Pollard)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
  - The roadway segment is listed in the ACHD CIP to be widened to a 3-lane section in the 2036-2040 timeframe. This would bring the segment to within standards.
- **Star Road (Floating Feather to SH 44)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
  - The roadway segment is not currently listed in the ACHD CIP to be widened.
  - To bring this segment to within standards, Star Road would need to be widened to a 5-lane section.
- **Star Road (SH 44 to Joplin)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the AM and PM peak hours.
  - The roadway segment is listed in the ACHD CIP to be widened to a 5-lane section in the 2031-2035 timeframe. This would bring the segment to within standards.
- **Plummer Road (Floating Feather to SH 44)**
  - The segment is projected to exceed the ACHD LOS E volume threshold for minor arterials in the PM peak hour.
  - The roadway segment is not currently listed in the ACHD CIP to be widened.
  - To bring this segment to within standards, Plummer Road would need to be widened to a 3-lane section.

## SITE ACCESSES

- With approval from ACHD, construct all accesses to the development to allow full access on the public street approaches with the following designations:
  - All local streets within the development should be constructed with one travel lane in each direction.
  - Site driveways with access to public streets should provide sufficient stacking distance for four vehicles (100 feet) to ensure acceptable operation and accommodate larger vehicles, including utility service and delivery vehicles.
  - Site accesses should match the existing grade of road to which they access to ensure the best possible sight distance.
  - All accesses and internal streets should be designed to provide adequate intersection site distance. Shrubbery and landscaping near the intersection and site access point should be maintained to ensure adequate sight distance is maintained.
- Site Access A on Can Ada Road just north of Purple Sage Road should be relocated to the north to allow for at least 280' of clear sight distance before any horizontal curve.
- Site Access C on Deep Canyon Drive does not provide adequate intersection spacing for a 35 mph local road. The segment of Deep Canyon Drive that is currently posted at 35 mph is recommended to be reduced to 25 mph to provide adequate intersection spacing and improve safety as development increases.

## RECOMMENDATIONS

Based on the report's analyses and evaluation findings, recommendations were developed accordingly for each analysis scenario.

### EXISTING CONDITIONS

No mitigations are recommended to accommodate the year 2022 existing traffic volumes and meet ACHD and ITD standards.

### YEAR 2030 BACKGROUND CONDITIONS

The following mitigations are recommended to accommodate the year 2030 background traffic volumes and meet ACHD and ITD standards:

- **SH 44 & Can Ada Road**
  - Construct an RCUT with SH 44 widened to a 4-lane section or a traffic signal with left and right turn lanes.
- **Beacon Light Road (SH 16 to Palmer)**
  - Widen to a 5-lane section.

### YEAR 2045 BACKGROUND CONDITIONS

The following mitigations are recommended to accommodate the year 2045 background traffic volumes and meet ACHD and ITD standards:

- **Beacon Light Road & Pollard Road**

- Construct a multi-lane roundabout with 2 lanes on Beacon Light Road or a traffic signal with left turn lanes and a westbound right turn lane.
- **Beacon Light Road & SH 16**
  - Widen SH 16 at the intersection and add a westbound right turn overlap.
- **Beacon Light Road & Palmer Lane**
  - Construct a multi-lane roundabout with 2 lanes on Beacon Light Road or a traffic signal with left and right turn lanes and Beacon Light Road widened to 2 through lanes.
- **Floating Feather Road & Star Road**
  - Construct a single-lane roundabout or a traffic signal with left turn lanes.
- **Floating Feather Road & Plummer Road**
  - Construct a single-lane roundabout or a traffic signal with left turn lanes.
- **SH 44 & Can Ada Road**
  - Construct an RCUT with SH 44 widened to a 4-lane section or a traffic signal with left and right turn lanes.
- **SH 44 & Star Road**
  - Widen SH 44 at the intersection and add dual northbound left turn lanes
- **SH 44 & Plummer Road**
  - Expand the traffic signal to include left and right turn lanes, the eastbound and westbound approaches widened to two through lanes, and dual southbound left turn lanes.
- **Deep Canyon Drive (Aerie to SH 16)**
  - Construct Aerie Way and the Wing Road extension.
- **Lanktree Gulch Road (Can Ada to Wing)**
  - Upgrade to a collector roadway.
- **Wing Road (Lanktree Gulch to Beacon Light)**
  - Upgrade to a collector roadway.
- **Beacon Light Road (Wing to Pollard)**
  - Widen to a 5-lane section.
- **Beacon Light Road (Pollard to SH 16)**
  - Widen to a 5-lane section.
- **Beacon Light Road (SH 16 to Palmer)**
  - Widen to a 5-lane section.
- **Beacon Light Road (Palmer to Linder)**
  - Widen to a 5-lane section.
- **Pollard Road (Beacon Light to Floating Feather)**
  - Widen to a 3-lane section.
- **Floating Feather Road (Star to Plummer)**
  - Widen to a 5-lane section.

- **Star Road (Floating Feather to SH 44)**
  - Widen to a 5-lane section.
- **Star Road (SH 44 to Joplin)**
  - Widen to a 5-lane section.
- **Plummer Road (Floating Feather to SH 44)**
  - Widen to a 3-lane section.

## YEAR 2045 BACKGROUND (WITH SELECT ROADWAY IMPROVEMENTS) CONDITIONS

The following mitigations are recommended to accommodate the year 2045 background (with select roadway improvements) traffic volumes and meet ACHD and ITD standards:

- **Beacon Light Road & Pollard Road**
  - Construct a multi-lane roundabout with 2 lanes on Beacon Light Road or a traffic signal with left turn lanes and a westbound right turn lane.
- **Beacon Light Road & SH 16**
  - Widen SH 16 at the intersection and add a westbound right turn overlap.
- **Beacon Light Road & Palmer Lane**
  - Construct a multi-lane roundabout with 2 lanes on Beacon Light Road or a traffic signal with left and right turn lanes and Beacon Light Road widened to 2 through lanes.
- **Floating Feather Road & Star Road**
  - Construct a single-lane roundabout or a traffic signal with left turn lanes.
- **Floating Feather Road & Plummer Road**
  - Construct a single-lane roundabout or a traffic signal with left turn lanes.
- **SH 44 & Can Ada Road**
  - Construct an RCUT with SH 44 widened to a 4-lane section or a traffic signal with left and right turn lanes.
- **SH 44 & Star Road**
  - Widen SH 44 at the intersection and add dual northbound left turn lanes
- **SH 44 & Plummer Road**
  - Expand the traffic signal to include left and right turn lanes, the eastbound and westbound approaches widened to two through lanes, and dual southbound left turn lanes.
- **Wing Road (Lanktree Gulch to Beacon Light)**
  - Upgrade to a collector roadway.
- **Beacon Light Road (Wing to Pollard)**
  - Widen to a 5-lane section.
- **Beacon Light Road (Pollard to SH 16)**
  - Widen to a 5-lane section.
- **Beacon Light Road (SH 16 to Palmer)**

- Widen to a 5-lane section.
- **Beacon Light Road (Palmer to Linder)**
  - Widen to a 5-lane section.
- **Pollard Road (Beacon Light to Floating Feather)**
  - Widen to a 3-lane section.
- **Floating Feather Road (Star to Plummer)**
  - Widen to a 5-lane section.
- **Floating Feather Road (Plummer to Pollard)**
  - Widen to a 3-lane section.
- **Star Road (Floating Feather to SH 44)**
  - Widen to a 5-lane section.
- **Star Road (SH 44 to Joplin)**
  - Widen to a 5-lane section.
- **Plummer Road (Floating Feather to SH 44)**
  - Widen to a 3-lane section.

## YEAR 2030 TOTAL TRAFFIC CONDITIONS

The following mitigations beyond those identified in 2030 background conditions are recommended to accommodate the year 2030 total traffic volumes and meet ACHD and ITD standards:

- **Deep Canyon Drive (Aerie to SH 16)**
  - Construct Aerie Way and the Wing Road extension.

## YEAR 2045 TOTAL TRAFFIC CONDITIONS

The following mitigations beyond those identified in 2045 background conditions are recommended to accommodate the year 2045 total traffic volumes and meet ACHD and ITD standards:

- **Purple Sage Road & Can Ada Road**
  - Construct a single lane roundabout or a traffic signal with left turn lanes.
- **Deep Canyon Drive & SH 16**
  - Construct Aerie Way and the Wing Road extension or add a traffic signal with left and right turn lanes and SH 16 widened to two through lanes in each direction.
- **Beacon Light Road & SH 16**
  - Add a second westbound right turn lane
- **SH 44 & Can Ada Road**
  - Construct a traffic signal with left and right turn lanes and SH 44 widened to 4 lanes.
  - An RCUT was recommended under 2045 background conditions but is no longer recommended under 2045 total traffic conditions
- **Purple Sage Road (Blessinger to Can Ada)**
  - Widen to a 3-lane section.

- **Can Ada Road (Purple Sage to Lanktree Gulch)**
  - Upgrade to a minor arterial.
- **Can Ada Road (Lanktree Gulch to New Hope)**
  - Upgrade to a minor arterial.

## YEAR 2045 TOTAL TRAFFIC (WITH SELECT ROADWAY IMPROVEMENTS) CONDITIONS

The following mitigations beyond those identified in 2045 background (with select roadway improvements) conditions are recommended to accommodate the year 2045 total traffic (with select roadway improvements) volumes and meet ACHD and ITD standards:

- **Purple Sage Road & Can Ada Road**
  - Construct a single lane roundabout or a traffic signal with left turn lanes.
- **Beacon Light Road & SH 16**
  - Add a second westbound right turn lane
- **SH 44 & Can Ada Road**
  - Construct a traffic signal with left and right turn lanes and SH 44 widened to 4 lanes.
  - An RCUT was recommended under 2045 background (with select roadway improvements) conditions but is no longer recommended under 2045 total traffic (with select roadway improvements) conditions.
- **Purple Sage Road (Blessinger to Can Ada)**
  - Widen to a 3-lane section.
- **Can Ada Road (Purple Sage to Lanktree Gulch)**
  - Upgrade to a minor arterial.
- **Can Ada Road (Lanktree Gulch to New Hope)**
  - Upgrade to a minor arterial.

## SITE ACCESSES

- **Purple Sage Road & Can Ada Road**
  - This intersection should be constructed as a two way stop control in the near term. A single lane roundabout or a traffic signal with left turn lanes is warranted in 2043. Right of way should be preserved now for a future roundabout.
- **Deep Canyon Drive & Aerie Way**
  - Although shown as a dogbone roundabout on the site plan, a two way stop controlled intersection is shown to operate acceptably for this intersection. The roundabout may be preferred to provide proper alignment with Aerie Way and the main internal collector.
- **Site Access A**
  - Relocate to the north to allow for at least 280' of clear sight distance before any horizontal curve.
- **Site Access C**
  - Reduce speed limit on this section of Deep Canyon Drive to 25 mph.



## RECOMMENDED NEW CONNECTIONS

### ■ Aerie Way

- Recommended to be constructed between Deep Canyon Drive and SH 16 to provide alternate access to SH 16 from the development and to reduce demand on Deep Canyon Drive. This connection should be constructed in conjunction with the Wing Road extension described below.
- Deep Canyon Drive is projected to exceed ACHD's local road ADT threshold by 2024. Constructing these new connections will extend the timeline of reaching this threshold to 2027. Operations at the intersection of Deep Canyon Drive / SH 16 are not projected to exceed capacity until 2040.
- The timing of constructing Aerie Way should be determined with the understanding that the local road ADT threshold of Deep Canyon Drive will be exceeded by 2024 but there are no capacity deficiencies in the near term.
- The construction of Aerie Way and the Wing Road extension alone will not relieve pressure from Deep Canyon Drive beyond 2027. It is also recommended that Deep Canyon Drive be disconnected from SH 16 upon completion of these connections as described below.
- The construction of Aerie Way will require land acquisition from the Bureau of Land Management and private landowners. The developer is currently in discussions with these landowners regarding logistics of making this land acquisition for right of way.

### ■ Wing Road Extension

- Recommended to be constructed between Lanktree Gulch Road and Beacon Light Road to provide alternate access to SH 16 from the development and to reduce demand on Deep Canyon Drive. This connection should be constructed in conjunction with Aerie Way described above.
- Deep Canyon Drive is projected to exceed ACHD's local road ADT threshold by 2024. Constructing these new connections will extend the timeline of reaching this threshold to 2027. Operations at the intersection of Deep Canyon Drive / SH 16 are not projected to exceed capacity until 2040.
- The timing of constructing the Wing Road extension should be determined with the understanding that the local road ADT threshold of Deep Canyon Drive will be exceeded by 2024 but there are no capacity deficiencies in the near term.
- The construction of Aerie Way and the Wing Road extension alone will not relieve pressure from Deep Canyon Drive beyond 2027. It is also recommended that Deep Canyon Drive be disconnected from SH 16 upon completion of these connections as described below.
- The construction of the Wing Road extension will require land acquisition from private landowners. Some of the land required for this extension is already owned by Willow Brook Development.

### ■ Can Ada Road

- Recommended to be improved between Purple Sage Road and New Hope Road. Improvements should include upgrading Can Ada Road to a minor arterial, flattening steep grades, and improving sight distance. The road should be improved to accommodate design standards for a minor arterial where possible and should include advisory sections where necessary.

### ■ Deep Canyon Drive Recommendations

- Deep Canyon Drive is projected to exceed ACHD's local road ADT threshold of 2,000 by 2024 (with 9% of the Willow Brook site built out). Constructing Aerie Way and the Wing Road extension will extend the timeline of reaching this threshold to 2027.

- With the construction of Aerie Way and the Wing Road extension, it becomes feasible to disconnect Deep Canyon Drive from SH 16. Traffic will divert to Aerie Way or Beacon Light Road to reach SH 16. This will bring the 2045 total traffic ADT on Deep Canyon Drive to within ACHD local road thresholds and will not further impact operations on other intersections and roadway segments.