

3.0 TRANSPORTATION ANALYSIS

Existing traffic conditions in the study area are derived from data collected by CDOT, local governments and data collected specifically for this analysis. Projected future conditions are based on the *Metro Vision 2030 Plan* prepared by DRCOG, the regional planning agency for the Denver metropolitan area (DRCOG 2005a). Traffic forecasts for 2030 were developed from the DRCOG regional travel demand model.

3.1 Existing Conditions

Existing conditions for traffic volumes and traffic operations for the study area freeway system and key arterial intersections are discussed below.

3.1.1 Traffic Volumes

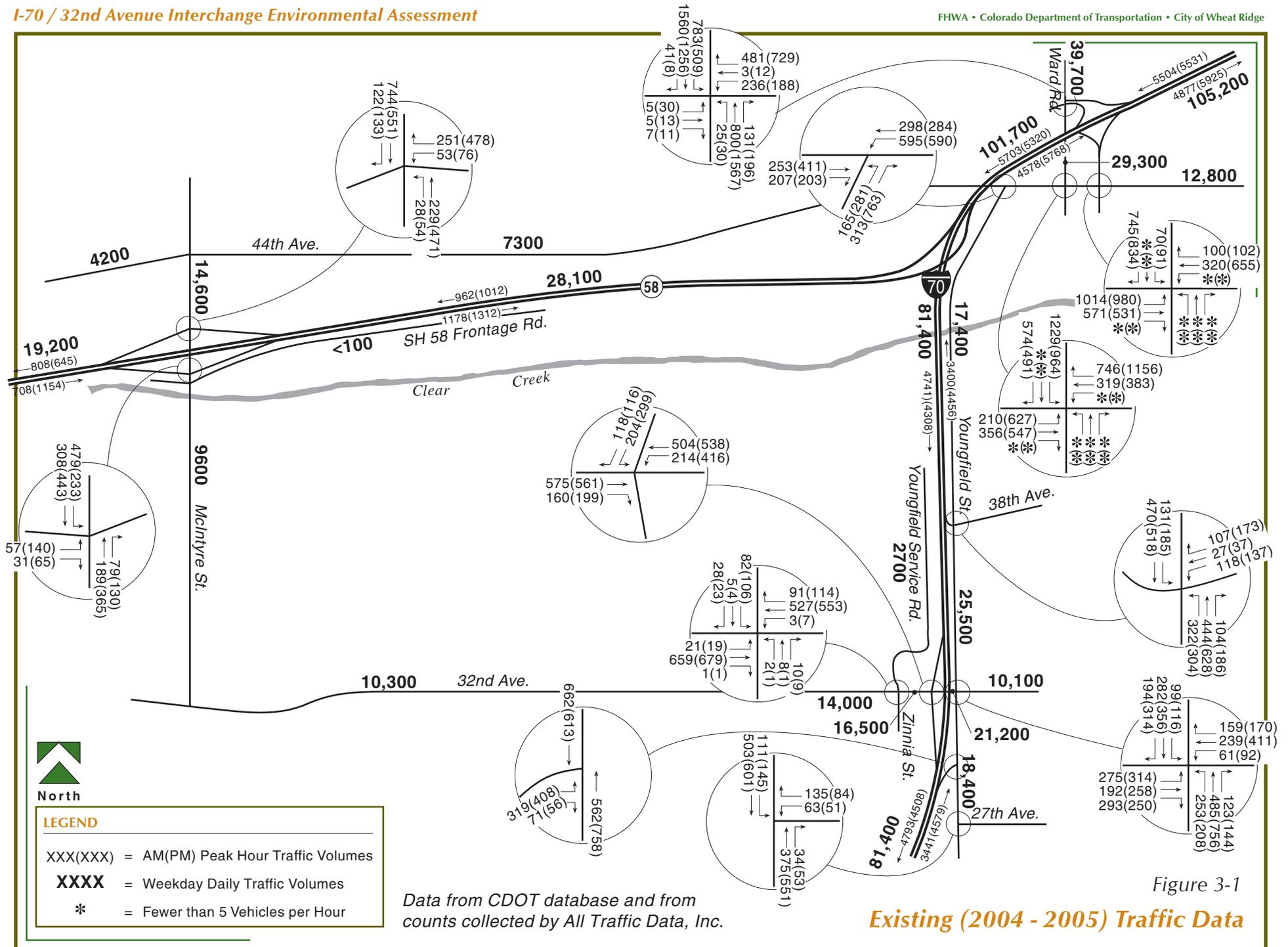
Morning and afternoon weekday peak hour turning movement data were recorded at numerous study area intersections. Twenty-four hour weekday counts were also collected at selected locations in the study area, and other daily traffic data were obtained from CDOT, the City of Wheat Ridge, and Jefferson County. These data are summarized in **Figure 3-1**.

I-70 carries the highest volume of traffic in the study area, carrying between 81,000 and 105,000 vehicles per day (vpd). SH 58 carries as much as 28,000 vpd. Other than the two freeway facilities, Ward Road, Youngfield Street and 32nd Avenue carry the highest volumes of traffic. Sections of each of these facilities carry over 20,000 vpd; Ward Road carries approximately 40,000 vpd.

The peak hour directional volumes on I-70 show a predominant westbound travel pattern during the AM peak hour and a predominant eastbound travel pattern during the PM peak hour. On SH 58, the eastbound traffic is heavier than westbound traffic during both the AM and PM peak hours. A general review of peak hour traffic reveals that PM peak hour traffic is generally heavier than the AM peak hour traffic (both directions combined).

At the I-70/32nd Avenue interchange, about two-thirds of the interchanging traffic is oriented to/from the east side of I-70 and one-third is to/from the west. A notable component of the one-third to/from the west is traffic associated with McIntyre Street to/from the north of SH 58. With the lack of ramp connections between SH 58 and I-70 west, traffic is forced to use McIntyre Street and 32nd Avenue to serve this pattern.

Initial traffic analysis indicated that Saturday times were not the critical time frames. While the Cabela's shopping center generated more traffic on a Saturday (than a weekday), the background traffic along the study area roadways (particularly Youngfield Street and 32nd Avenue) was less on Saturday, and this more than offsets the increase in weekend Cabela's shopping center traffic impact. Weekday AM and PM peak hour traffic projections were used to develop the alternatives. The traffic analysis included herein is focused on the weekday AM and PM peak hours, with the exception of the Proposed Action analysis, which also includes an analysis of the Saturday peak hour.



3.1.2 Traffic Operations

Level of service (LOS) is a qualitative measure of operating characteristics at an intersection or along a stretch of highway based on the roadway capacity and motorist delay. The 2000 *Highway Capacity Manual* defines six levels of service, ranging from A to F, with LOS A representing the best possible operating conditions and LOS F representing over capacity (gridlock), or congested conditions. In urbanized areas, LOS D is generally considered to be acceptable for peak hour traffic operations. LOS calculations were performed for the study area freeway system and for the key arterial intersections.

3.1.2.1 Freeway Analysis

The analysis method described in the Highway Capacity Manual was used to analyze the operation of the I-70 and SH 58 mainline, as well as the merge, diverge and weave areas at the interchanges throughout the study area. The freeway facility analysis module of the Highway Capacity Software has been used in this analysis; this methodology accounts for the queuing from one segment to another in oversaturated freeway conditions and the metering that results from bottleneck conditions. The resulting levels of service are shown on **Figure 3-2**.

The merge/diverge area is the space where vehicles enter or exit the freeway. Studies indicate that operational impacts are greatest within 1,500 feet upstream of an off-ramp and 1,500 feet downstream of an on-ramp. For right side on- and off-ramps, the two lanes farthest to the right are the most impacted. The majority of the interchanges in the study area include a merge and diverge in each direction of travel. The merge and diverge areas at the I-70 interchange with 32nd Avenue operate at LOS D or better. The eastbound on-ramp and the westbound off-ramp at the Ward Road interchange have poor levels of service (LOS E) during peak hours primarily due to the heavy mainline traffic flow. All merge and diverge areas along SH 58 operate at LOS B or better during the peak hours.

A freeway weaving section is formed when an on-ramp is closely followed by an off-ramp (2,500 feet or less). When the distance exceeds 2,500 feet, the merge/diverge methodology is typically used for analysis. There are currently two weave sections in the study area; one along eastbound I-70 between the SH 58 and Ward Road interchanges, and one along westbound I-70 between the Ward Road and SH 58 interchanges. Both of these weave sections currently operate at LOS D or better during the peak hours.

A basic freeway segment is a section along a freeway that is not in a merge, diverge or weave area. Analysis of a basic freeway segment is based on the segment's vehicular density. With 0-11 passenger cars per mile per lane (pc/mi/ln), a segment would operate at LOS A. The opposite extreme includes densities that are over 45 pc/mi/ln which represent a LOS F, over capacity. I-70 through the study area operates at LOS D or better during the peak times. SH 58 currently operates at LOS B or better during the peak hours.

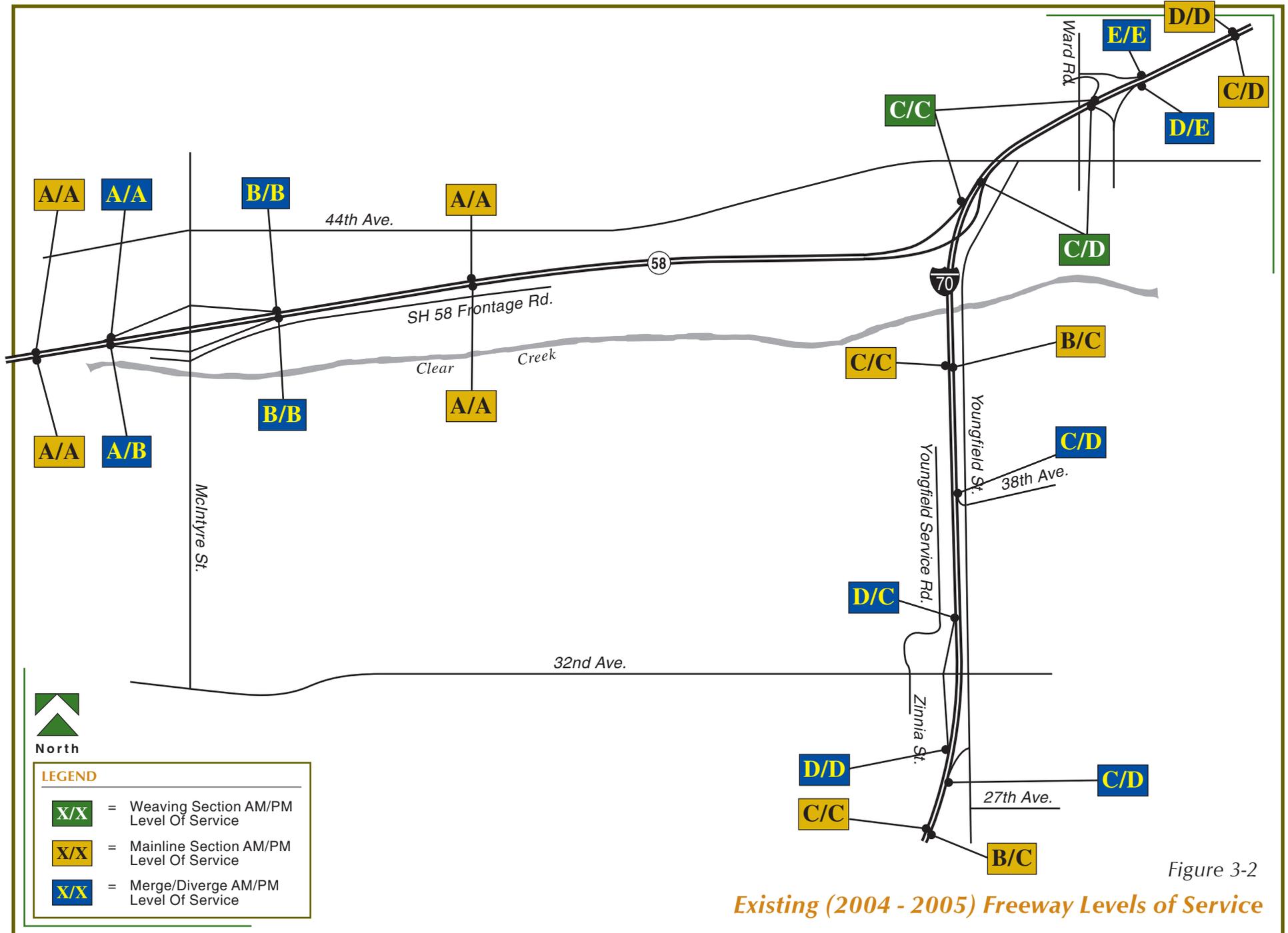


Figure 3-2
Existing (2004 - 2005) Freeway Levels of Service

3.1.2.2 Intersection Analysis

At signalized intersections, LOS is based on the average delay in seconds per vehicle. LOS A indicates very low levels of intersection delay averaging less than ten seconds per vehicle. LOS F indicates highly congested conditions, with the average driver experiencing more than 80 seconds of delay at the intersection. LOS D, which is the desired minimum LOS, represents an average vehicle delay ranging from 35 and 55 seconds.

Interchange cross-street intersection LOSs were calculated from the Synchro/SimTraffic simulation software package which has the ability to incorporate vehicular stacking impacts that can result between closely spaced intersections.

This is an advanced feature over the *Highway Capacity Manual* since the *Highway Capacity Manual* procedures calculate an intersection's LOS under isolated conditions, not as part of a system. Three simulation "runs" were conducted using the existing traffic volumes and results were averaged to calculate each intersection's LOS in the study area for the AM and PM peak hours. The existing signal timing was used to simulate the existing intersection operations. The resulting LOSs are shown on **Figure 3-3**.

As shown on **Figure 3-3**, several interchange cross-street intersections in the study area currently operate at poor levels of service (LOS E or F) during the peak hours. Congestion is experienced at the I-70/Ward Road/44th Avenue interchange and the adjacent intersections, as well as at the I-70 eastbound off-ramp intersection onto Youngfield Street. Although the intersections along 32nd Avenue (at Youngfield Street and the I-70 westbound ramps intersections) show overall acceptable levels of service, congestion and queuing are known to occur along certain approaches at these intersections during the peak hour, particularly at the Youngfield Street/32nd Avenue intersection (which is shown to operate at LOS D, nearly an E).

3.2 Future Travel Demand

3.2.1 No-Action Forecasts

Year 2030 forecasted average daily traffic (ADT) and peak hour volumes for the No-Action Alternative are shown on **Figure 3-4**. These traffic volumes were developed from the DRCOG 2030 regional travel demand model. The DRCOG model was updated to include the proposed land use associated with the proposed development, which includes a Cabela's shopping center. Traffic volumes generated by the Cabela's shopping center were estimated from the trip rates and equations published in the Institute of Transportation Engineers' *Trip Generation* and from other Cabela's store facilities. Driveway counts were collected at numerous Cabela's stores in other locations in support of estimating the trips for the Wheat Ridge Cabela's proposal. The Cabela's trip generation is based on a 230,000 square foot facility. The proposed store has subsequently been reduced in size to 185,000 square feet; therefore, the traffic projections included herein are conservatively high.

As a maximum traffic scenario, the Northwest Corridor Combined Alternative, which includes a freeway facility along SH 93 and US 6 through Golden and McIntyre Street as a four-lane arterial, has been included in the travel demand forecasts. As described in **Section 2.3 No-Action Alternative**, this is not currently a committed project, but it has been included in this analysis to allow maximum traffic to be considered.

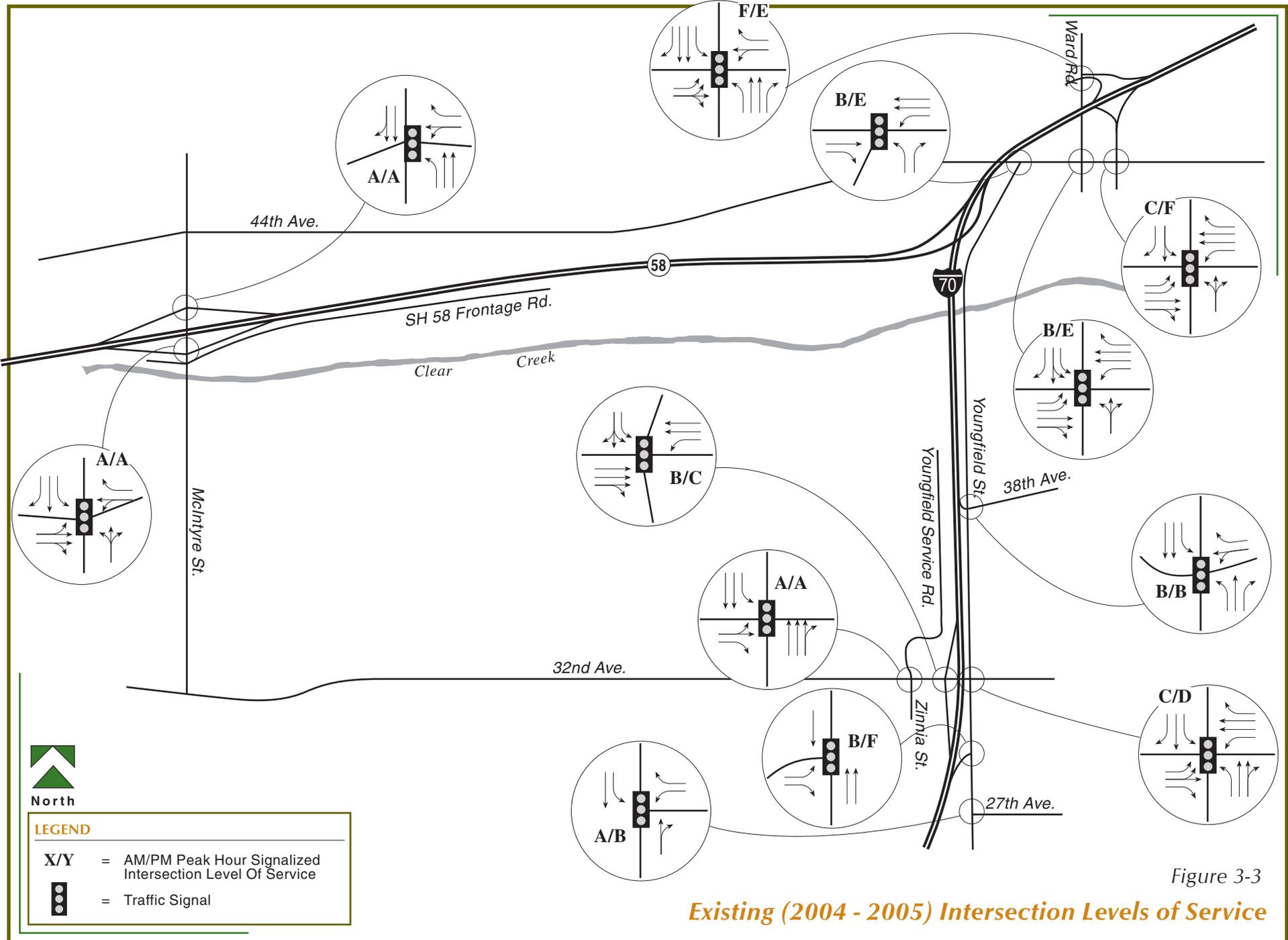
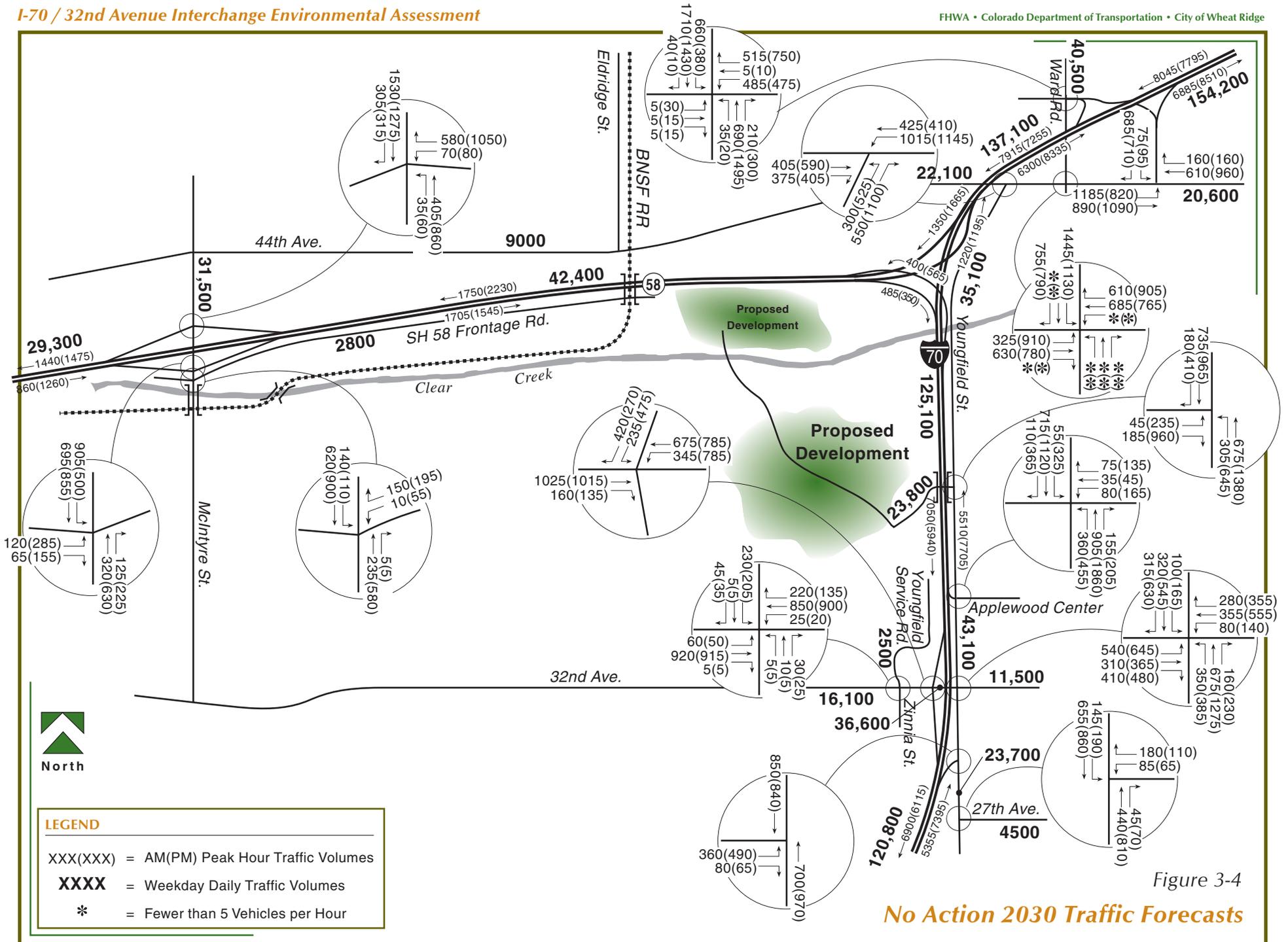


Figure 3-3

Existing (2004 - 2005) Intersection Levels of Service



The No-Action Alternative roadway network for travel demand forecasting includes the planned SH 58 to I-70 west ramps. This is part of a CDOT project to enhance the I-70/SH 58 interchange. The travel demand forecasting also includes the planned widening of Youngfield Street to four lanes between 38th Avenue and 44th Avenue. These improvements are the local agency projects that the City of Wheat Ridge is leading. The No-Action Alternative is discussed further in **Section 2.3 No-Action Alternative**.

The daily traffic forecasts generated by the model were used as a starting point in developing 2030 peak hour traffic projections. Calibration of these daily numbers was based on a comparison of the actual 2005 recorded traffic volumes with the results from DRCOG's current-day travel demand model. The 2030 daily volume projections were manually adjusted to reflect observed travel patterns and anticipated patterns resulting from the proposed developments in the area.

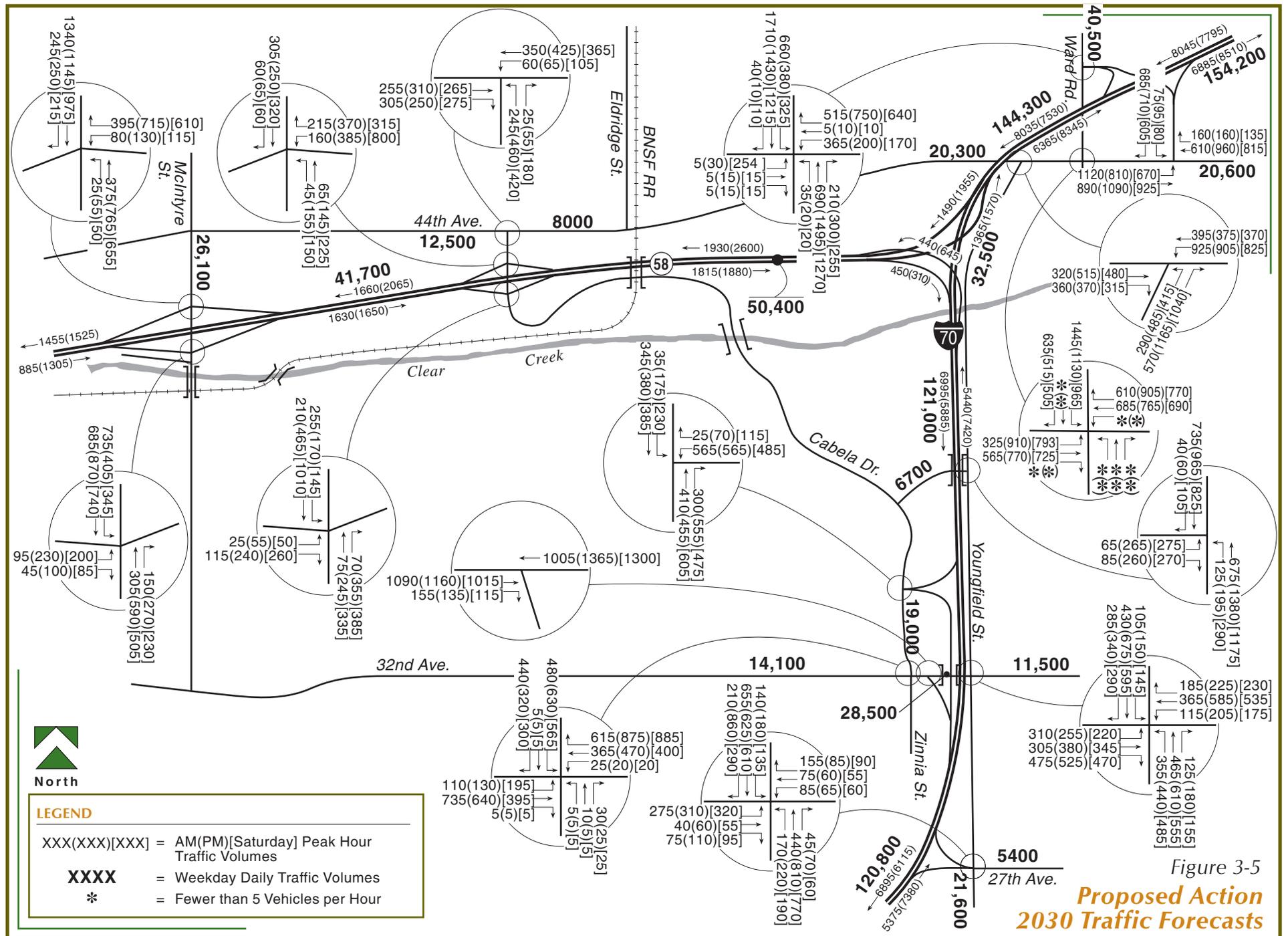
2030 daily traffic projections along I-70 in the No-Action Alternative range from 35 to 55 percent higher than existing traffic volumes, and 2030 projections along SH 58 are approximately 50 percent higher than existing. I-70 is projected to carry approximately 121,000 vpd west of the 32nd Avenue interchange and 154,000 vpd east of the Ward Road interchange. SH 58 is projected to carry approximately 42,000 vpd between I-70 and McIntyre Street. 32nd Avenue is expected to see an increase in traffic at I-70 carrying approximately 36,600 vpd adjacent to and just west of I-70. Youngfield Street is projected to carry between 35,000 and 43,000 vpd in 2030. These increases are due to anticipated regional growth including the addition of the Cabela's shopping center.

Because the Cabela's shopping center (and retail development in general) attracts a greater number of customers during weekends than weekdays, a review of weekend traffic conditions was conducted to determine if this is a critical time period. The Cabela's shopping center is estimated to generate approximately 45 percent more daily traffic during the weekend than the weekday (approximately 35,000 trips per day versus 24,000 trips per day). Numerous driveway traffic counts collected at other Cabela's stores substantiate the trip estimates and weekend/weekday patterns.

While the proposed development is expected to generate more traffic during the weekend the "background" peak hour traffic along the study area roadways is approximately 20 percent less during the weekend. From a traffic analysis conducted for the proposed development, which includes a Cabela's shopping center (first edition prepared in January 2005), the net effect generally results in lower (10 to 15 percent lower) weekend peak hour traffic than weekday peak hour traffic flows along most study area roadways. The weekday PM peak hour is the critical time period when considering the combination of Cabela's related traffic and background traffic study area roadways.

3.2.2 Proposed Action Forecasts

The refined DRCOG travel demand model (as described above) was used to establish the 2030 traffic volume shifts that would result from the Proposed Action. The roadway network associated with Proposed Action was modeled, and the resulting daily and peak hour traffic volume forecasts are shown on **Figure 3-5**.



The new SH 58/Cabela Drive interchange is estimated to attract an additional 9,000 vpd onto SH 58 west of I-70. The new interchange would result in a decrease in volume along I-70 between SH 58 and the 32nd Avenue interchange and through the I-70/32nd Avenue and I-70/Ward Road interchanges. The proposed Cabela Drive connection to 32nd Avenue would provide relief to Youngfield Street.

Very little weekend “background” traffic is anticipated to use the SH 58 interchange; most of the interchange traffic will be associated with the Cabela’s shopping center. The greater impact of the Cabela’s shopping center on a Saturday is not offset by lower background traffic at the SH 58 interchange (as it is at 32nd Avenue and Youngfield Street) since there is very little background traffic anticipated to use the interchange. The critical time period for the SH 58 interchange is when Cabela’s shopping center traffic is peaking, during Saturday. Therefore, the Proposed Action forecasts (**Figure 3-5**) include weekday AM and PM peak hour as well as Saturday peak hour forecasts.

The proposed hook ramps at the I-70/32nd Avenue interchange would generate minor shifts in ramp traffic compared to the No-Action Alternative roadway network. The traffic demand along 32nd Avenue would decrease given the proposed hook ramps since Cabela’s traffic from and to westbound I-70 would not travel 32nd Avenue. In the eastbound direction, with both hook ramps being proposed south of 32nd Avenue, traffic passing through the 32nd Avenue/Youngfield Street intersection is expected to shift orientation slightly (today only the off-ramp is south of 32nd Avenue).

The traffic volume projections shown as part of the Proposed Action reflect an I-70 guidance signing scheme that would encourage Cabela’s-bound drivers to use the SH 58/Cabela Drive interchange. This is shown in more detail in **Section 2.4.10**.

3.3 Street and Highway Operations

3.3.1 Freeway Analysis

The 2030 freeway LOSs were calculated using the *Highway Capacity Manual* procedures. Using the No-Action Alternative roadway network, which includes construction of the I-70 west/SH 58 west ramps along with the 2030 traffic forecasts that include the Cabela’s shopping center, the resulting 2030 freeway levels of service were calculated and are shown on **Figure 3-6**. With the addition of the I-70 west/SH 58 west ramps, a new weave section is introduced along eastbound I-70 between 32nd Avenue and SH 58. In the westbound direction, an additional merge condition is created on I-70. **Figure 3-6** shows that many of the merge, diverge, weave and mainline levels of service on I-70 are projected to be at E or F in the 2030 No-Action Alternative. The poor LOSs projected along the I-70 mainline are primarily due to the heavy traffic that this freeway is anticipated to carry. On SH 58, all freeway operations are projected to be at LOS C or better during the peak hours.

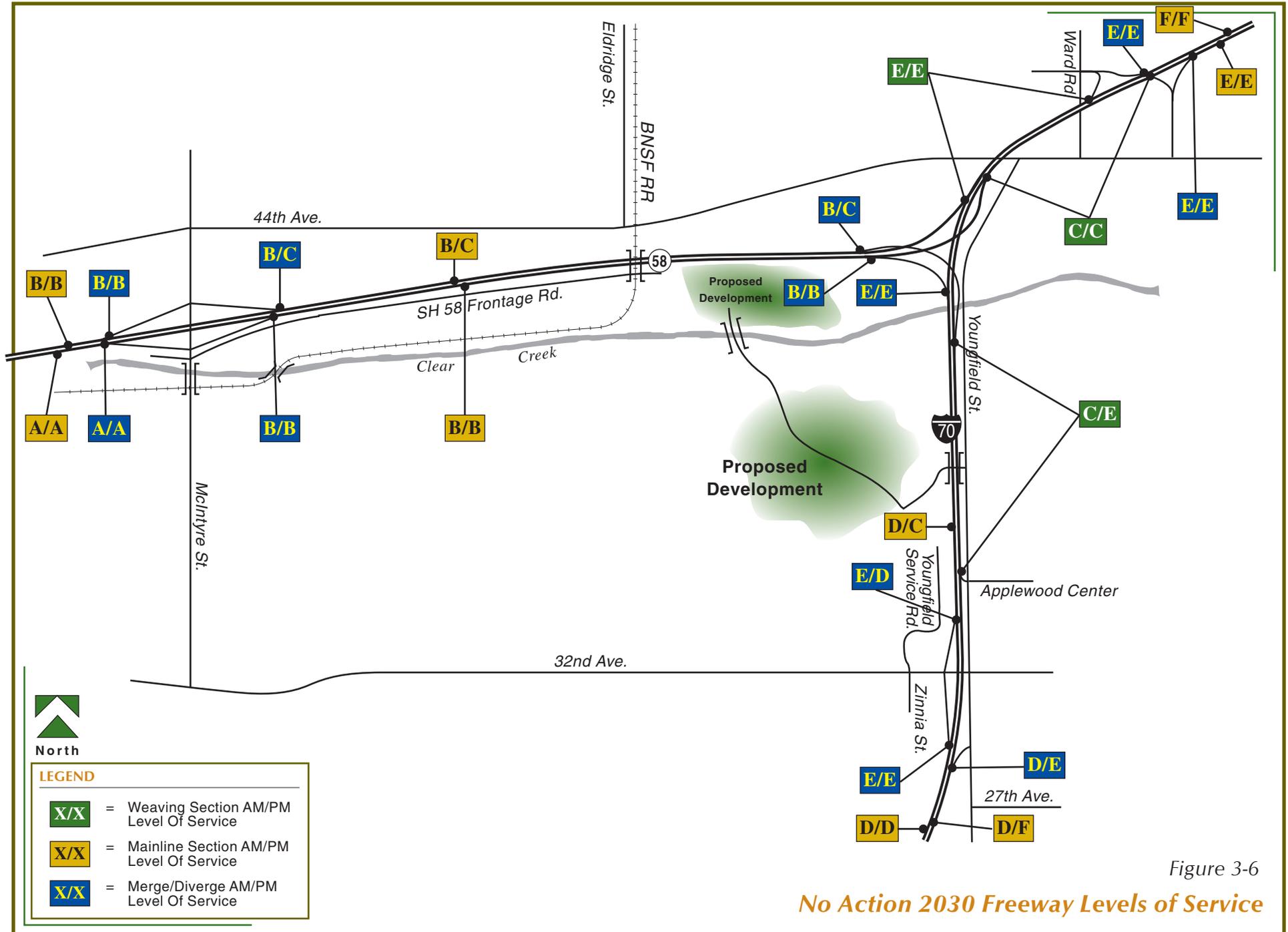


Figure 3-6

No Action 2030 Freeway Levels of Service

Similarly, the freeway operations were analyzed for the Proposed Action, as shown on **Figure 3-7**. The Proposed Action introduces additional merge and diverge points on SH 58 at the new SH 58/Cabela Drive interchange; however, all freeway operations on SH 58 are projected to remain at LOS D or better in the Proposed Action. Along I-70, a new weave section would be created in the westbound direction between SH 58 and the 32nd Avenue off-ramp given the location of the hook ramps. However, this weave is expected to operate at LOS D or better during the peak hours. In the eastbound direction the weave section created by the additional I-70 to SH 58 flyover ramp (in the No-Action Alternative) would be eliminated with the relocation of the 32nd Avenue on-ramp to opposite 27th Avenue. Several freeway mainline, merge/diverge and weave movements are projected to operate at poor LOSs even with the Proposed Action. This is a result of heavy peak hour through travel on I-70 in combination with heavy ramp volumes, particularly at the Ward Road interchange.

Although the freeway ramp configurations are different in the No-Action Alternative and Proposed Action, the resulting LOSs are generally comparable.

3.3.2 Intersection Analysis

The 2030 No-Action Alternative intersection lane geometry and projected LOSs are shown on **Figure 3-8**. This lane geometry, along with the forecasted AM and PM peak hour intersection turning movements (**Figure 3-4**), were used to analyze the future operations of the study intersections. Similar to the analysis of existing intersection operations, the future levels of service were calculated using the average of three simulation “runs” (using the Synchro/SimTraffic software).

As shown on **Figure 3-8**, many of the cross-street intersections are projected to operate at poor levels of service under the No-Action Alternative in 2030. The three signalized intersections along 32nd Avenue are projected to operate at LOS F during the PM peak hour (in part due to their proximity to each other), as is the Youngfield Street/I-70 Eastbound off-ramp intersection. The two ramp terminal intersections at the I-70/Ward Road intersection are also projected to operate at LOS F, along with the adjacent intersection of 44th Avenue and Ward Road. The McIntyre Street/SH 58 Westbound Ramp intersection is projected to operate at LOS F during the PM peak hour, and the unsignalized intersection of McIntyre Street/SH 58 Frontage Road is projected to operate with long delays along the westbound approach in the PM peak hour given 2030 traffic projections.

The 2030 Proposed Action intersection lane geometry and projected LOSs are shown on **Figure 3-9**. The level of service calculations were conducted using the lane geometry shown along with the forecasted peak hour volumes associated with the Proposed Action (**Figure 3-5**). The Proposed Action intersection LOS results are for weekday AM and PM peak hour as well as Saturday peak hour. As shown, the majority of the poor LOSs in the No-Action Alternative would be improved with the Proposed Action. All intersection operations in the vicinity of the I-70/32nd Avenue interchange are projected to operate at LOS C or better. Likewise, the SH 58/McIntyre Street interchange would be relieved by the addition of the new SH 58/Cabela Drive interchange. Although the operations of the intersections in the vicinity of the I-70/Ward Road interchange would be improved, the Ward Road/I-70 westbound ramps intersection and the 44th Avenue/Youngfield Street intersections are still expected to have delays associated with LOS E or F during the peak hours.

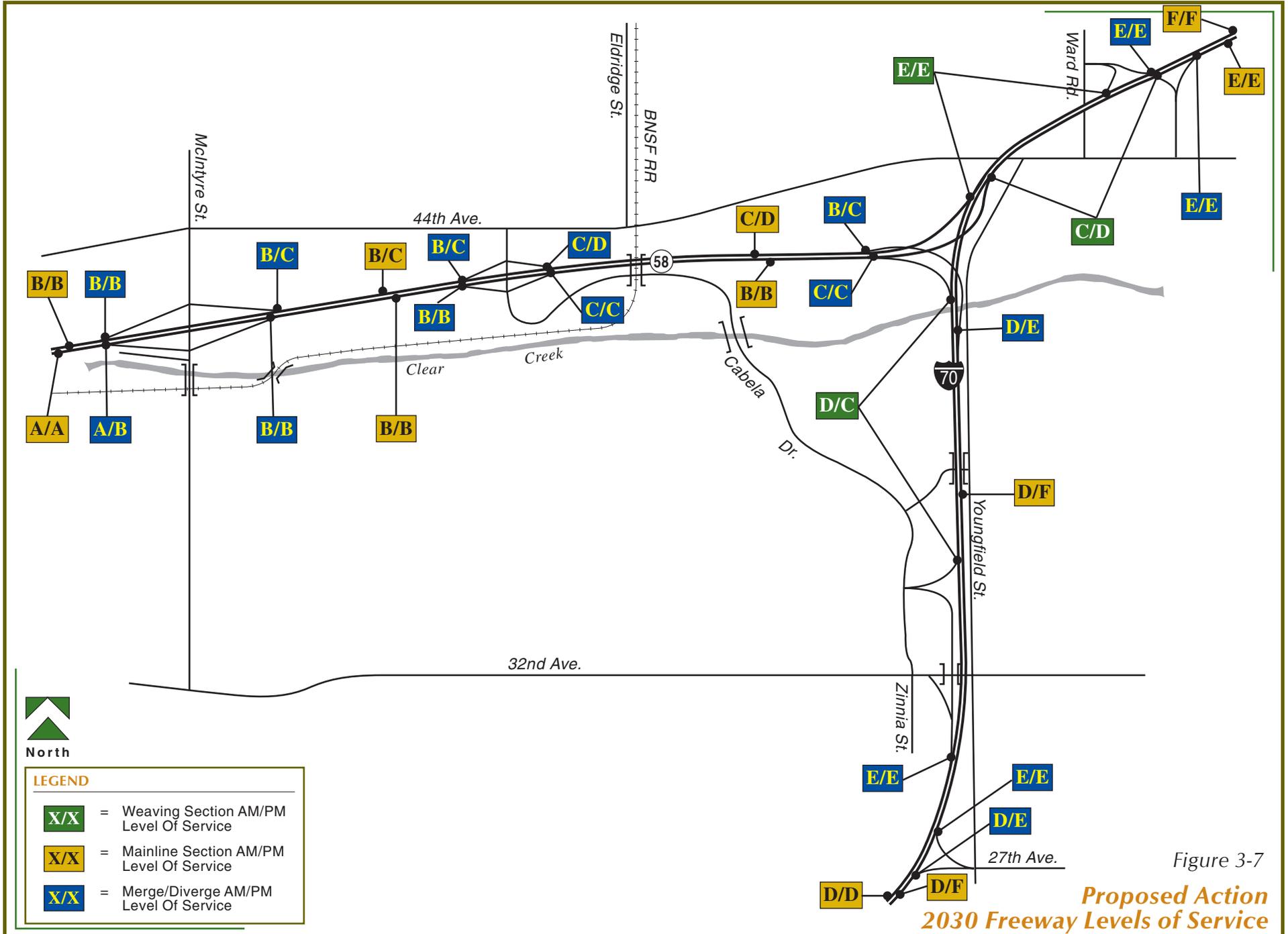
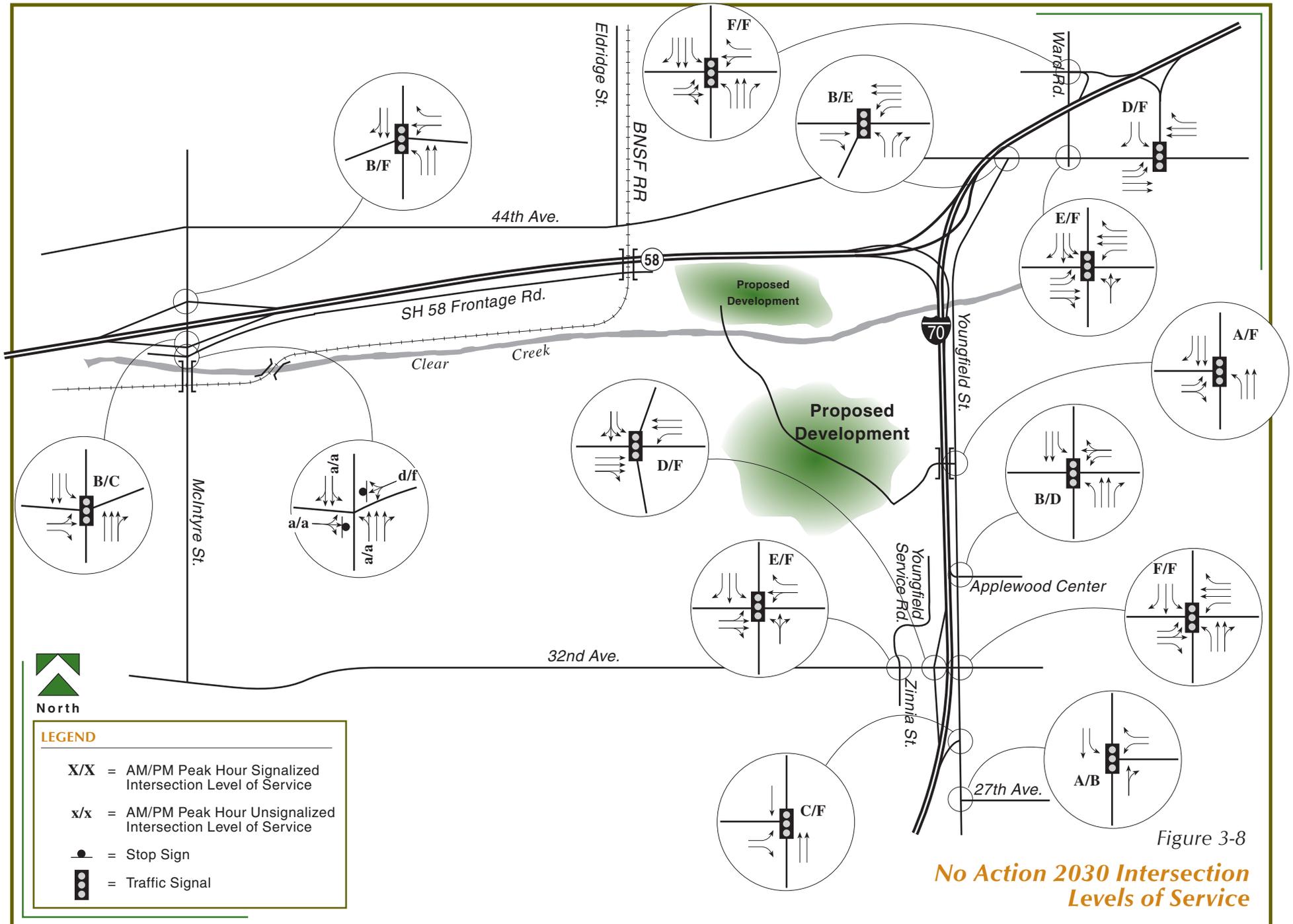


Figure 3-7

**Proposed Action
2030 Freeway Levels of Service**



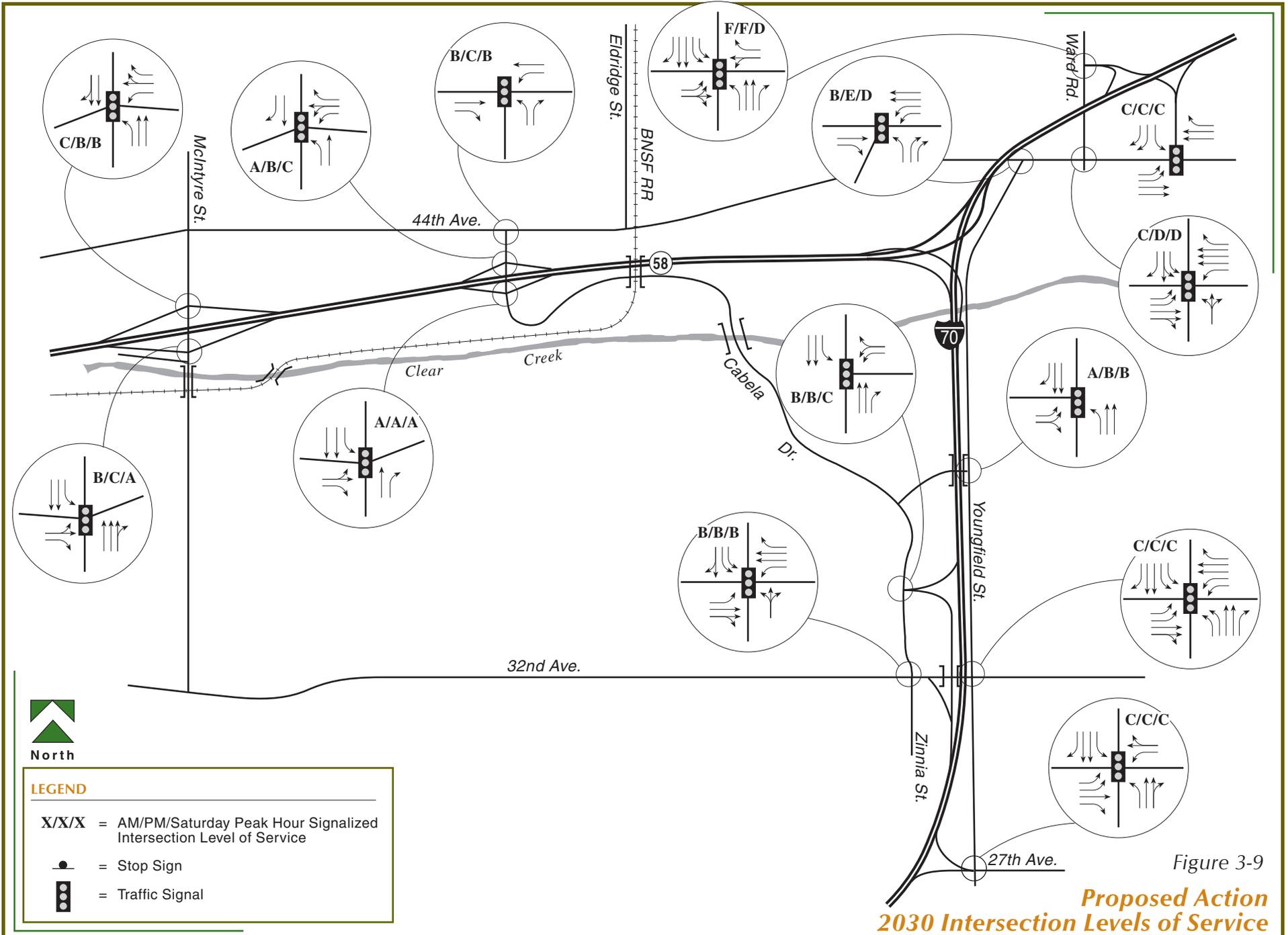


Figure 3-9

Proposed Action
2030 Intersection Levels of Service

3.4 Street and Highway Safety

A safety analysis was conducted as part of the System Level Feasibility Study. This effort considered five years of accident data (1999 to 2003) in the area, including the I-70 and SH 58 mainline, ramps and the ramp intersections. The data were provided by CDOT's Safety and Engineering Office. Accident data for the intersections were provided by the City of Wheat Ridge approximately covering the time period, from January 2000 to November 2004.

Between Denver West Boulevard and Ward Road, I-70 experienced 993 accidents within the five-year period including the interchange intersections. Three were fatalities while 237 were injury accidents. The remaining 754 were property damage only accidents. The resulting accident rate for this time period was 1.74 accidents per million vehicle-miles of travel which is below the State of Colorado average for an urban interstate (2.09 accidents per million vehicle-miles of travel in 2002).

Between McIntyre Street and I-70, SH 58 experienced 56 accidents in five years including the interchanges. None of these were fatalities and 25 were injury-related accidents. The resulting accident rate for this time period was 0.85 accidents per million vehicle-miles of travel which is well below the State of Colorado average for facilities like SH 58.

Safety projections along the mainline freeways in the study area were completed for the No-Action Alternative and Proposed Action using a variation of the Safety Performance Function (SPF) procedures developed by the CDOT Traffic and Safety Engineering department. CDOT's SPF graphs were used to estimate the future number of accidents on I-70 and SH 58 based on the historic accident rates, existing traffic volumes and projected future traffic volumes. Using this methodology, the No-Action Alternative and Proposed Action freeway configurations are expected to result in essentially the same number of freeway-related accidents (within one percent) in 2030 on I-70 and SH 58 through the study area.

In order to predict accident expectancy at intersections, a rudimentary relationship between intersection laneage and peak hour turning volumes and accident experience was derived. A proportion of the turning volume divided by the number of turning lanes (for right, through and left turn movements) was used to represent an "exposure" value. The historic number of accidents divided by this exposure value translates to a fixed value, which was then used to "back" into the predicted number of future accidents based on the future intersection turning volumes and approach lanes. An increase in traffic produces a greater exposure value, which results in a greater number of predicted accidents. An increase in the number of lanes for a movement produces a decrease in the exposure value, which results in a decrease in the number of predicted accidents.

Applying this methodology to the study area intersections for the No-Action Alternative and Proposed Action reveals that the Proposed Action is estimated to decrease the number of accidents by 25 percent compared to the No-Action Alternative, given 2030 traffic projections. Even with the additional planned traffic signals associated with the new SH 58/Cabela Drive interchange, the net result is a decrease in intersection accidents due to the numerous lane additions planned at the other study area intersections and the diversion of traffic from higher accident locations (such as 32nd Avenue/Youngfield Street) to the new interchange. The freeway

system is anticipated to experience an increase in accident experience due to the new interchanges on SH 58. Overall, the safety benefits projected due to intersection improvements included in the Proposed Action would offset the anticipated freeway accident increases on SH 58.

3.5 Transit Access

Currently, the Regional Transportation District (RTD) operates several bus routes serving the study area. Routes 17, 28, 32, 38L, 44 and 44L serve the study area making use of study area roadways. The 6X also passes through the area along I-70 serving the Denver West area. A park-n-Ride facility exists northwest of the I-70/Ward Road interchange being served by routes 17, 44L, 6X, and 72X. Along Youngfield Street, a small bus transfer center exists in front of the Wal-Mart on the southeast corner of Youngfield Street and 38th Avenue.

The current RTD routes could be maintained in either the No-Action Alternative or the Proposed Action. However, the Proposed Action would provide more flexibility in routing options because it includes additional roadway connections. Ward Road will serve as the end of the line for the RTD Gold Line from downtown Denver. “Feeder” bus routes are anticipated to serve the light rail station, and the additional roadway connections throughout the study area will provide more bus circulation options.

3.6 Pedestrian and Bicycle Facilities

There is currently pedestrian and bicycle activity in the area, which is expected to continue in the future. A regional bike trail exists along Clear Creek through the study area. Local access to the trail is provided via a parking area along the SH 58 frontage road, but it is also provided along the Youngfield Service Road near the Table Mountain Animal Center just west of I-70. Traffic and pedestrian counts collected along the 32nd Avenue intersections indicated that 15 to 25 pedestrians per hour travel through the area at peak times. This is in light of the Manning School and Maple Grove Elementary School located along Alkire Street south of 32nd Avenue. An eight-foot detached path is provided along the south side of 32nd Avenue for pedestrian use. Near the southern limits of the study area, a bicycle/pedestrian bridge spans I-70 at approximately 26th Avenue. This facility is not ADA-compliant and is used by approximately 10 pedestrians per hour at peak times.

The Proposed Action includes an attached sidewalk along the south side of 32nd Avenue through the I-70/32nd Avenue interchange. An attached sidewalk would be provided on the north side of 40th Avenue through the I-70 underpass, improving east/west bicycle/pedestrian connectivity across I-70. A north/south bicycle/pedestrian connection would be provided through the Cabela’s site. Trail connectivity to the Clear Creek Trail from 32nd Avenue would be maintained and will be better defined through the Cabela’s site planning process. Improvements to the I-70/32nd Avenue interchange will require replacement of the pedestrian bridge at 26th Avenue with an ADA compliant bicycle/pedestrian bridge. **Section 5.2** presents additional information on the trails.

3.7 Emergency Vehicles and Goods Access

Three fire protection districts serve the study area. The Fairmount Fire Protection District serves the proposed development area north of Clear Creek and west of Youngfield Street. In addition, by agreement, they are the first to respond to accidents/emergencies on I-70 between Ward Road and 32nd Avenue and along SH 58. They can also be requested to assist West Metro Fire Rescue in the event of an incident occurring south of Clear Creek. The Proposed Action would improve the Fairmount Fire Protection District's ability to respond to incidents in the proposed development area by providing a more direct route via 44th Avenue/Cabela Drive.

West Metro Fire Rescue serves the proposed development south of Clear Creek and west of Youngfield Street. They can be requested to assist the Fairmount Fire Protection District in the event of an incident occurring north of Clear Creek or on I-70 or SH 58. The Proposed Action would provide two options for West Metro Fire Rescue to access the proposed development area; via 32nd Avenue or the proposed new SH 58/Cabela Drive interchange. These would be in addition to the 40th Avenue underpass.

The Wheat Ridge Fire Protection District serves Wheat Ridge from Youngfield Street eastward, which includes the Applewood Shopping Center. They too can be requested to assist either the Fairmount Fire Protection District or West Metro Fire Rescue in the event of an emergency occurring within the proposed development on the west side of Youngfield Street. Access would be provided by either the proposed I-70 underpass at 40th Avenue or 32nd Avenue. The enhanced circulation from the street connections included as part of the Proposed Action would provide all three Districts additional flexibility and routing options to serve the area.

3.8 Traffic Impacts on Residential Areas

The study area includes several residential areas that will potentially be impacted by the traffic generated by the proposed development and by the roadway network modifications associated with the Proposed Action. There are three primary residential areas for which the impacts of the Proposed Action have been addressed, as follows:

- ▶ The neighborhoods north and south of 32nd Avenue between McIntyre Street and the Youngfield Service Road, which are in unincorporated Jefferson County,
- ▶ The neighborhoods along 26th/27th Avenue east of Youngfield Street, which are in the City of Lakewood, and
- ▶ The neighborhoods north of 44th Avenue approximately between McIntyre Street and Eldridge Street, which are in unincorporated Jefferson County.

The portion of 32nd Avenue between McIntyre Street and the Youngfield Service Road is classified by Jefferson County as a minor arterial. Compared to the No-Action Alternative, the Proposed Action is expected to decrease traffic along 32nd Avenue by approximately 12 percent (2,000 vpd) as a result of the proposed interchange on SH 58. The Proposed Action includes improvements along 32nd Avenue in the vicinity of the two schools, including sidewalk and signing enhancements.

The portion of 27th Avenue east of Youngfield Street is classified by the City of Lakewood as a major collector. City standards indicate that a major collector can accommodate up to 7,000 vpd. The Proposed Action includes hook ramps aligning with 27th Avenue for eastbound I-70; these hook ramps are expected to increase the traffic along 27th Avenue by approximately 20 percent (900vpd) compared to the No-Action Alternative. The traffic volume on 27th Avenue is projected to be 5,400 vpd with the Proposed Action, which is consistent with the City of Lakewood's standard for a major collector. Traffic mitigation measures were considered to restrict or limit traffic from directly crossing Youngfield Street onto 27th Avenue. The City of Lakewood, who maintains 27th Avenue, does not support such restrictions in light of the possible enforcement required and given the fact that the estimated 2030 traffic on 27th Avenue is expected to be well within the capacity of a two lane major collector.

Some concern has been expressed by the public as to the adequacy or safety of the dam (located approximately 600 feet east of Youngfield Street) since eastbound 27th Avenue is now restricted to trucks less than 7,000 pounds empty weight. Through investigation and conversations with the City of Lakewood, CDOT Bridge Staff and Consolidated Mutual Water, it was discovered that the load posting by the City of Lakewood was a voluntary effort by the City to keep heavy truck traffic off local streets. The increased traffic on the dam and bridge is not a concern with regard to dam safety, as the dam and bridge are not deficient from a load capacity perspective.

The proposed SH 58/Cabela Drive interchange is expected to draw more traffic (an approximate 40 percent increase) onto 44th Avenue west of Cabela Drive. 44th Avenue is classified by Jefferson County as a minor arterial. The additional traffic it would serve in the vicinity of the new interchange can be accommodated through the incorporation of acceleration and deceleration lanes for left and right turning traffic. Because of the residential uses along the north side of 44th Avenue, neighborhood entry "treatments" and signing would be incorporated into the Proposed Action to discourage traffic from traveling neighborhood streets. Recreation use in the area (ball fields at 44th Avenue/Indiana Street) occasionally generates parking along 44th Avenue spilling over into the commercial uses along the south side of 44th Avenue.

Along 38th Avenue (east of Youngfield Street), traffic projections in year 2030 are expected to increase relative to existing traffic levels. Besides regional growth, this roadway would be expected to also serve some Cabela traffic accessing the site via the 40th Avenue underpass. Traffic increases along 38th Avenue (due to the Cabela's shopping center) are projected to be on the order of 1,600 vpd specifically due to the Cabela's shopping center, which represents roughly a 21 percent increase relative to current 38th Avenue traffic levels just east of Youngfield Street. This increase is anticipated as part of both the No-Action Alternative and Proposed Action, since the 40th Avenue underpass is a separate action included in both.

3.9 Proposed Development Access

The Proposed Action includes a five-lane Cabela Drive connection to 32nd Avenue, a four-lane connection to Youngfield Street at 40th Avenue, and a four-lane connection to the new SH 58/Cabela Drive interchange. The following describes access characteristics of each:

- ▶ **SH 58 Connection** – This roadway connection to SH 58 is projected to carry 11,000 vpd, most of which is associated with the Cabela’s shopping center. A four-lane cross section has been provided to accommodate this level of traffic. This four lane section includes two lanes heading to the proposed development from SH 58, one outbound lane from the proposed development to SH 58 and a common center left turn lane. Between 40 and 45 percent of the Cabela’s shopping center traffic is expected to utilize this access roadway to the SH 58 interchange.
- ▶ **40th Avenue Underpass** – This roadway connection is projected to carry 6,700 vpd, most of it being Cabela’s-related traffic. Three lanes have been provided from Cabela Drive widening to four lanes underneath I-70 to Youngfield Street. The Youngfield Street/40th Avenue planned intersection provides four lanes; one lane heading into the proposed development and two lanes from the proposed development and an additional right turn lane to southbound Youngfield. Between 25 and 30 percent of the Cabela’s shopping center traffic is expected to utilize this means of access.
- ▶ **Connection to 32nd Avenue** – Cabela Drive will be a five lane section from Clear Creek to the I-70 westbound hook ramps. South of the I-70 westbound hook ramps, this roadway is projected to carry 19,000 vpd. This level of traffic requires four through-lanes with a common center left turn lane for access to the development. Between 30 and 35 percent of the Cabela’s shopping center traffic is expected to utilize this means of access.