LOCAL ROAD SAFETY PLANS

Your Map to Safer Roads

TECHNICAL WORKSHOP – II

Local Road Safety Plan – City of North Las Vegas (CNLV)

June 12, 2023

CITY OF NORTH LAS VEGAS

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ATKINS

Member of the SNC-Lavalin Group

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Introductions

Agenda

- Welcome and Introductions
- Workshop 1 Recap
  - LRSP Vision and Mission
  - CNLV Emphasis Areas
- Systemic Analysis Results and Projects
- Next Steps and Wrap-Up

Workshop 1 Recap

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Local Road Safety Plan - CNLV

What is a Local Road Safety Plan (LRSP)?

LRSP helps to prioritize safety issues using a data driven approach and identify key strategies that address the issues to reduce fatalities and injuries. The process results in a prioritized list of issues, risks, actions, and improvements that can be used to reduce fatalities and serious injuries on the local road network.

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Safe System Approach

Death/Serious Injury is unacceptable

Humans make mistakes

Humans are vulnerable

Responsibility is shared

Safety is proactive

Redundancy is crucial

Source: FHWA

WHERE ARE WE ON THE SAFE SYSTEM JOURNEY?

Traditional approach		Safe System approach
Prevent crashes	→	Prevent death and serious injuries
Improve human behavior	→	Design for human mistakes/limitations
Control speeding	→	Reduce system kinetic energy
Individuals are responsible	→	Share responsibility
React based on crash history	→	Proactively identify and address risks

Source: FHWA

Safe System Approach in Local Road Safety Plan

Step 1: Identify Stakeholders

- Commit to a zero fatalities and serious Injuries goal
- Identify leadership and safety champion(s)
- Establish and engage with multi-disciplinary stakeholders

Step 2: Use Holistic Data

- Identify Risk factors to support proactive and systemic approach
- Data collection, management and data sharing
- Incorporate assessment of equity and impacts of safety outcomes

Step 3: Choose Proven Solutions

- Identify emphasis or focus areas
- Address unsafe speeds and identify speed management solutions
- Use resources such as FHWA's Proven Safety Countermeasures

Step 4: Implement Solutions

- Implement Redundant solutions across the Safe System elements
- Prioritize solutions to address most severe risk factors and historically underserved communities
- Identify dedicated funding sources

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Previous Discussion Points

Reduce serious and fatal crashes throughout the city.

Have a vision of reducing fatal and serious injury crashes that are associated with speeding.

Improving accessibility/inclusivity of roads to promote multimodal options for various stakeholders.

Reduce fatal and serious injury crashes in historically underserved communities.

LRSP Vision and Mission

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CNLV LRSP Vision

The City of North Las Vegas LRSP identifies the greatest causes of fatalities and serious injuries on city roadways. The plan provides a prioritized list of issues, risks, actions, and improvements for reducing crashes that cause fatalities and serious injuries, improving safety for all road users.

CNLV LRSP Mission

The City of North Las Vegas LRSP mission is to eliminate traffic-related fatalities and serious injuries on city roads by year 2040

CNLV Emphasis Areas

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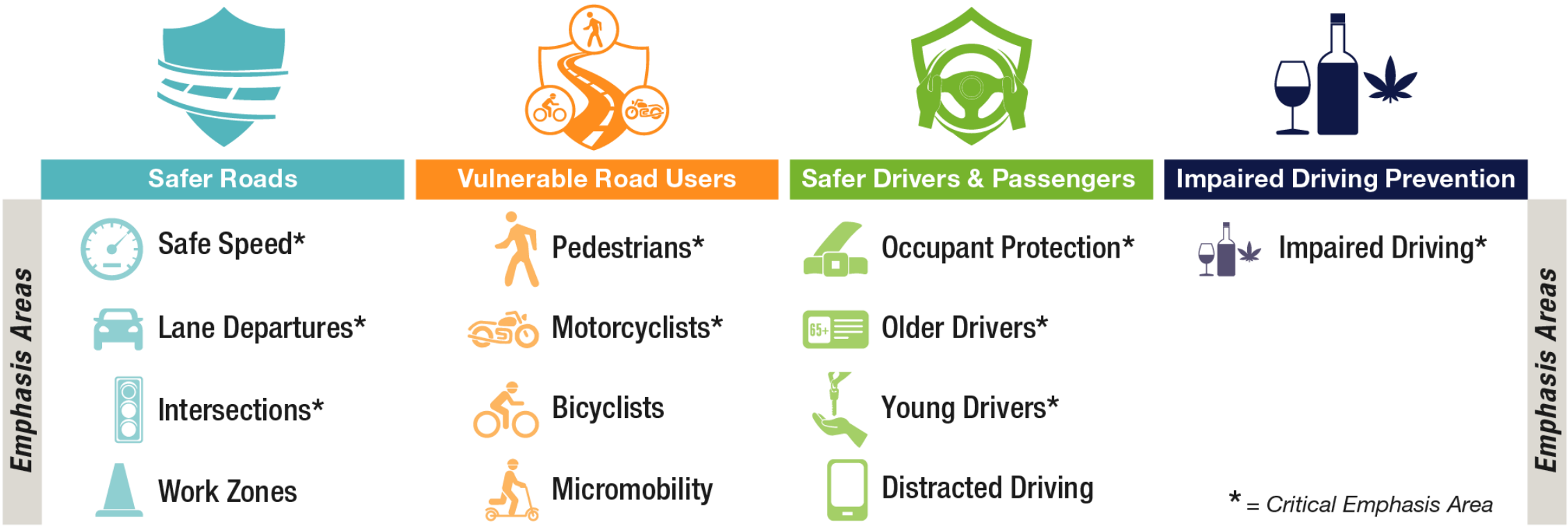
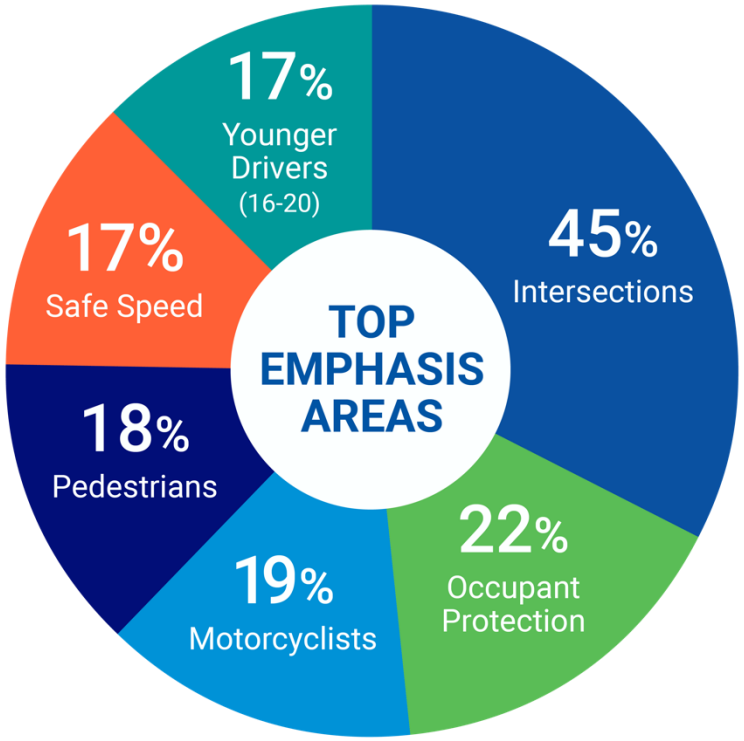
Local Road Safety Plan - CNLV

Nevada Strategic Highway Safety Plan (SHSP) Emphasis Areas



Top Emphasis Areas for CNLV Based on data

Based on the percentage of fatal and serious injury crashes emphasis areas identified for CNLV are shown.



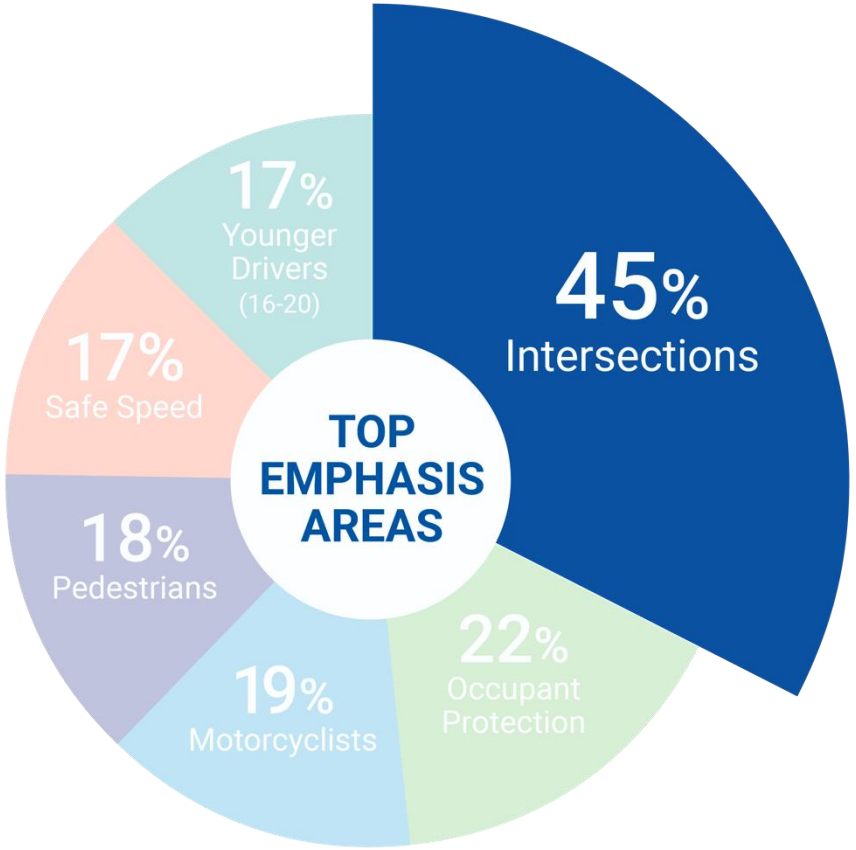
EMPHASIS AREA — Intersections

Objective/Description

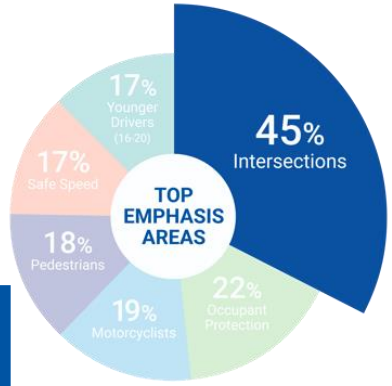
Reduce the frequency and severity of Intersection-related crashes

Goal

A ____% reduction in Intersection related crashes at targeted locations, in CNLV.



EMPHASIS AREA — Intersections



Install Medians/Refugee Islands (Engineering)	Roundabouts (Engineering)	Install exclusive pedestrian/bike phases (Engineering)	Complete Intersection (Engineering)
▪ **Performance Measures:** Number of medians /refugee islands per year ▪ **Evaluation and Monitoring:** Conduct before and after study at the implemented intersections 3 years after implementation.	▪ **Performance Measures:** Number of roundabouts planned per fiscal year ▪ **Evaluation and Monitoring:** Conduct before and after study at the implemented intersections 3 years after implementation.	▪ **Performance Measures:** Number of pedestrian/ bike phases per year ▪ **Evaluation and Monitoring:** Conduct before and after study at the implemented intersections 3 years after implementation.	▪ **Performance Measures:** Number of complete intersections per year ▪ **Evaluation and Monitoring:** Conduct before and after study at the implemented intersections 3 years after implementation.

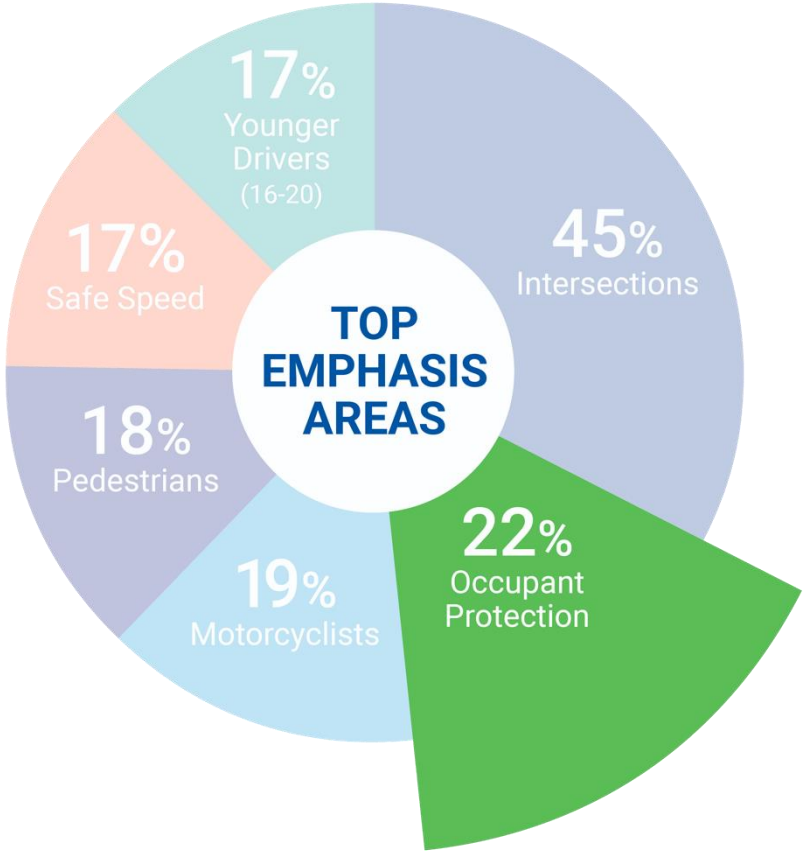
EMPHASIS AREA — Occupant Protection

Objective/Description

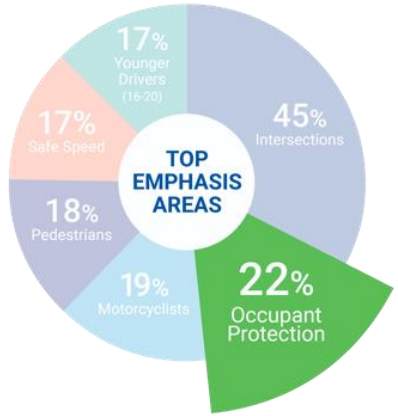
Reduce the frequency and severity of Occupant protection-related crashes

Goal

A ____% reduction in Occupant protection-related crashes at targeted locations, in CNLV.



EMPHASIS AREA — Occupant Protection



Communications, Outreach and School Programs (Education)	Targeted Seatbelt Enforcement (Enforcement)	Secure Safety Grants (Education/Enforcement)
▪ **Performance Measures:** Number of school visits, number of safety campaigns (Example: Click It or Ticket) ▪ **Evaluation and Monitoring:** Increase Seatbelt usage by __%	▪ **Performance Measures:** Number of Seatbelt checks ▪ **Evaluation and Monitoring:** Increase Seatbelt usage by __%	▪ **Performance Measures:** Amount of funds secured for unrestrained occupants emphasis area ▪ **Evaluation and Monitoring:** Total amount of funds secured versus the amount of funds applied for.

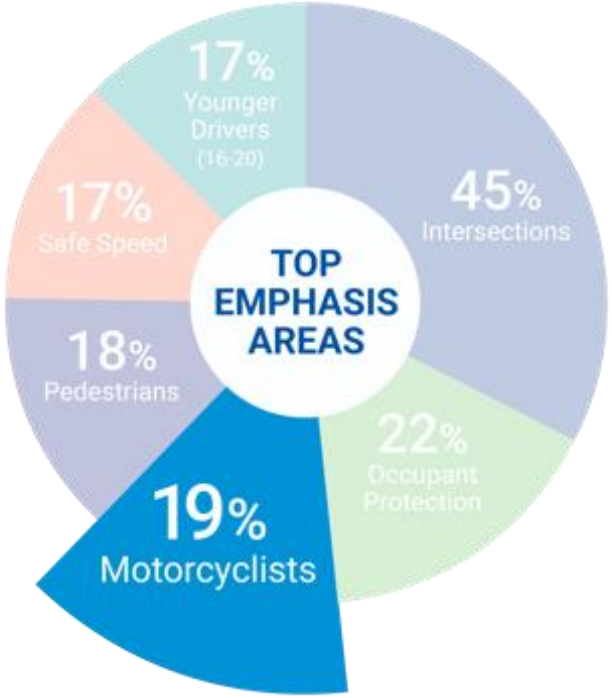
EMPHASIS AREA — Motorcycle

Objective/Description

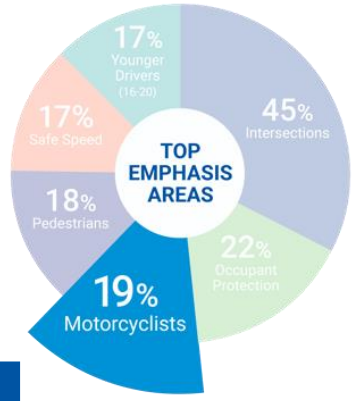
Reduce the frequency and severity of Motorcycle crashes

Goal

A reduction in the frequency and severity of Motorcycle crashes, in CNLV by __%.



EMPHASIS AREA — Motorcycle



Programs for High-Risk Motorcyclist Behaviors (Education)	Targeted Helmet Enforcement Campaigns (Enforcement)	Increase Percentage of Trained and Licensed Motorcyclists (Education)
▪ **Performance Measures:** Number of public education programs ▪ **Evaluation and Monitoring:** Reduce high-risk motorcyclist behavior-related crashes by __%	▪ **Performance Measures:** Number of helmet enforcement checkpoints ▪ **Evaluation and Monitoring:** Increase helmet usage by __%	▪ **Performance Measures:** Number of trainings ▪ **Evaluation and Monitoring:** Increase trained and licensed motorcyclists by __%.

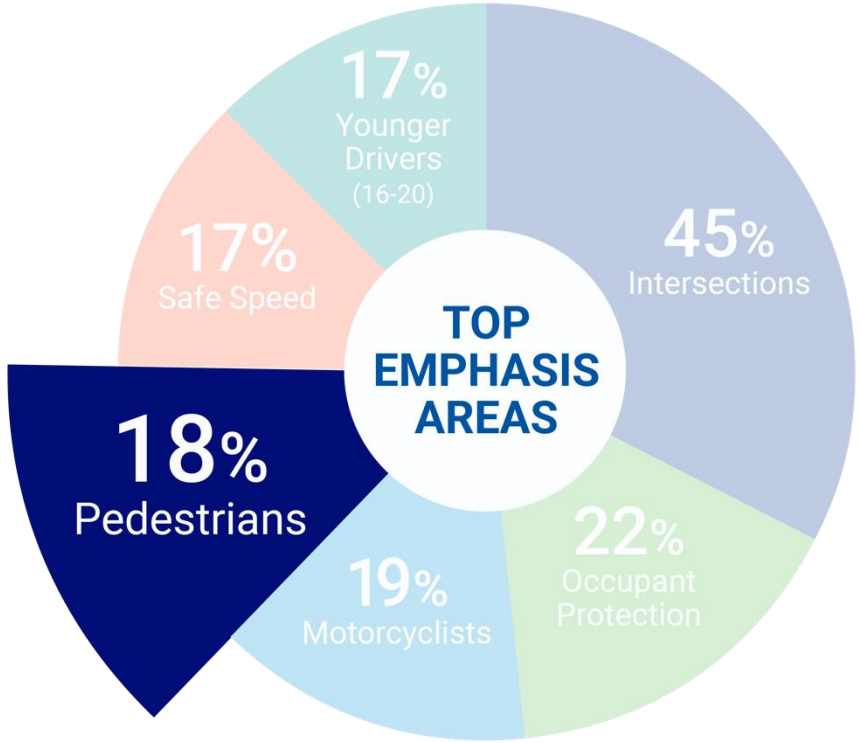
EMPHASIS AREA — Pedestrian

Objective/Description

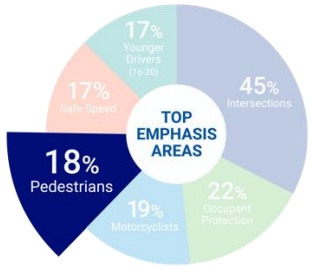
Reduce the frequency and severity of Pedestrian crashes

Goal

A reduction in the frequency and severity of Pedestrian crashes, in CNLV by __%.



EMPHASIS AREA — Pedestrian



Pedestrian Refugee/Median Islands (Engineering)	Midblock Pedestrian Crossing Control (Engineering)	Midblock Pedestrian Crossing (Enforcement)	Outreach and Education Initiatives to Eliminate High-Risk Pedestrian Behaviors (Education)
▪ **Performance Measures** Number of refugee islands installed ▪ **Evaluation and Monitoring:** Conduct before and after study at the implemented intersections 5 years after implementation.	▪ **Performance Measures:** Number of Rectangular Rapid Flashing Beacons (RRFB) or Pedestrian Hybrid Beacons (PHB) installed ▪ **Evaluation and Monitoring:** Conduct before and after study at the implemented intersections 5 years after implementation.	▪ **Performance Measures:** Enforcement for vehicles yielding at mid-block pedestrian crossings for pedestrians. ▪ **Evaluation and Monitoring:** Conduct check point evaluations periodically.	▪ **Performance Measures:** Number of targeted audience education campaigns ▪ **Evaluation and Monitoring:** Reduce pedestrian – related crashes by __%

Recent 4-hours Enforcement Exercise @ Las Vegas Boulevard North and Silver Nugget intersection: Total 82 stops

16 speeding violations
6 jaywalking violations
45 failure to yield to a pedestrian violations
2 distracted driver violations
23 "other violations" (equipment, license, registration, insurance violations)

EMPHASIS AREA — Safe Speed

Objective/Description

Reduce the frequency of Speeding related crashes

Goal

A reduction in the frequency and severity of Speeding related crashes, in CNLV by __%.

EMPHASIS AREA — Safe Speed

Road Diets (Engineering)	Traffic Calming Measures (Engineering)	High-Visibility Speeding Enforcement at High-Risk Locations (Enforcement)	Speed-Related Educational and Public Information Campaigns (Education)
▪ **Performance Measures:** Number of road diets installed ▪ **Evaluation and Monitoring:** Conduct before and after study at the implemented intersections 5 years after implementation.	▪ **Performance Measures:** Number of traffic calming devices installed ▪ **Evaluation and Monitoring:** Conduct before and after study at the implemented intersections 5 years after implementation.	▪ **Performance Measures:** Number of enforcement campaigns ▪ **Evaluation and Monitoring:** Reduce speeding–related crashes by __%	▪ **Performance Measures:** Number of education campaigns ▪ **Evaluation and Monitoring:** Reduce speeding-related crashes by __%

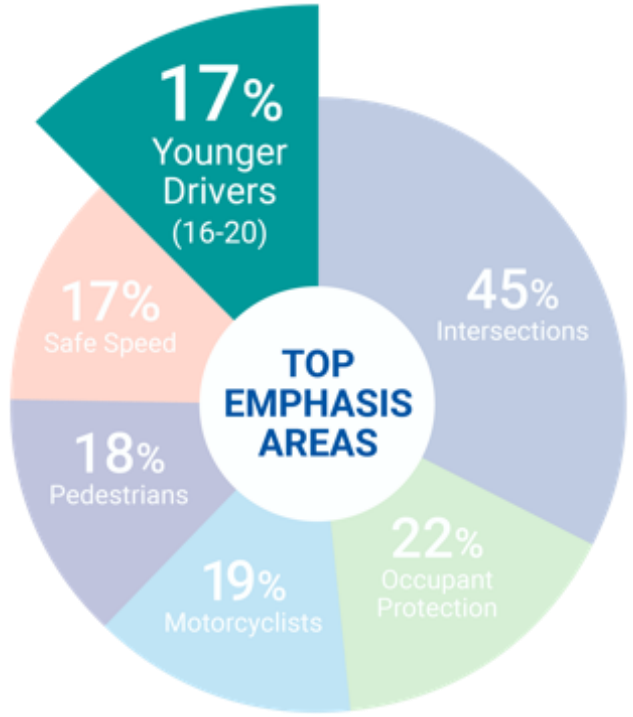
EMPHASIS AREA — Younger Drivers

Objective/Description

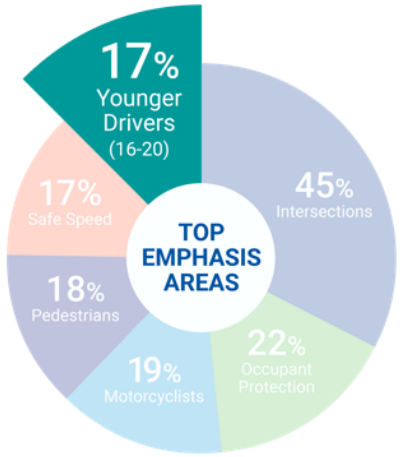
Reduce the frequency and severity of Younger Driver crashes

Goal

A reduction in the frequency and severity of Younger Driver crashes, in CNLV by __%.



EMPHASIS AREA — Younger Drivers



Improve Driver Education for Young Drivers (Education)	Support Traffic Law Enforcement of Young Driver-Related Laws (Enforcement)
▪ **Performance Measures:** Number of safety campaigns ▪ **Evaluation and Monitoring:** Reduce younger driver crashes by __%	▪ **Performance Measures:** Number of enforcement campaigns ▪ **Evaluation and Monitoring:** Reduce younger driver crashes by __%

Systemic Analysis Results and Projects

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Local Road Safety Plan - CNLV

LRSP Process

Step 1: Gather Data

Step 2: Analyze the Data

Step 3: Determine EAs / Focus Crash Types

Step 4: Select Focus Facilities

Step 5: Risk Factors

Step 6: Screen and Prioritize Locations

Step 7: Identify Strategies

LRSP PROCESS
Step 1: Gather Data

- **Crash Data:** Obtained geolocated crash data for years 2015-2019
- **Roadway Data:** Using Highway Performance Monitoring System (HPMS)
- **Data Collection:** Collected Intersection and Segment related data
- **Equity Data:** US DOT Justice 40 Mapping Tool

LRSP PROCESS
Step 2: Analyze Data

- Developed crash density maps
- Reconcile various GIS layers to find trends
- Crash data preparation to develop Emphasis Area summaries

LRSP PROCESS
Step 3: Determine Emphasis Areas

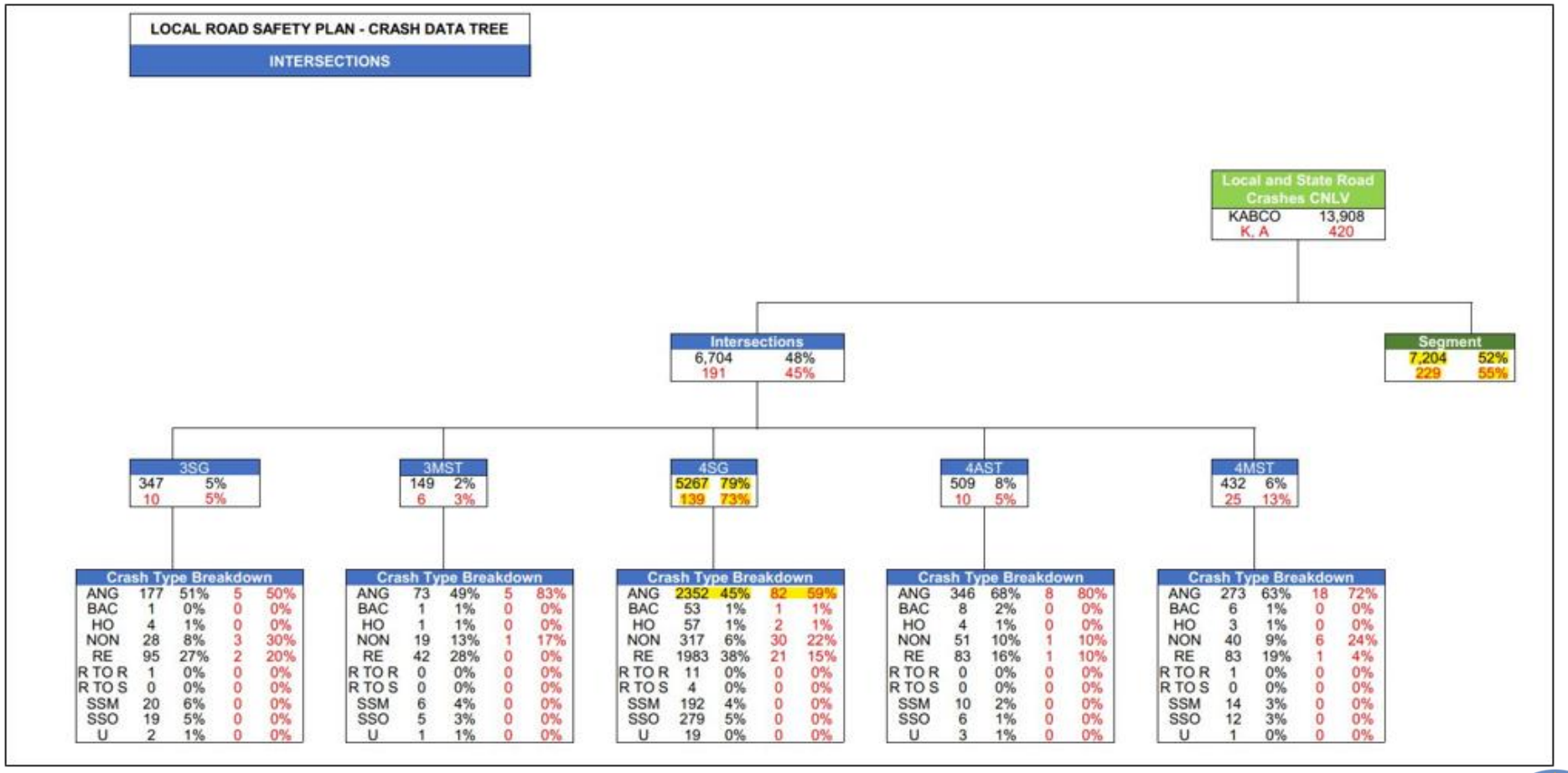
- Safe Speed
- Lane Departures
- Intersections
- Workzones
- Pedestrians
- Motorcyclists
- Bicyclists
- Micromobility
- Occupant Protection
- Older Drivers
- Younger Drivers
- Distracted Driving
- Impaired Driving

LRSP PROCESS
Step 3: Determine Emphasis Areas

Emphasis Area	Local and State Roadways (CNLV)		All Roadways (CNLV)		Nevada State 2014-2018 (SHSP)	
	Fatalities & A-type injuries		Fatalities & A-type injuries		Fatalities & A-type injuries	
	Percent	Frequency	Percent	Frequency	Percent	Frequency
Total Crashes	420		517		7,612	
Safe Speed	17%	72	17%	89	17%	1274
Lane Departures	15%	65	20%	104	27%	2043
Intersections	**45%**	191	**41%**	211	**34%**	2612
Work Zones	3%	13	3%	16	N.A	N.A
Pedestrians	18%	76	18%	93	16%	1231
Motorcyclists	19%	79	19%	98	20%	1512
Bicyclists	3%	12	3%	14	N.A	N.A
Micromobility	0%	0	0%	0	N.A	N.A
Occupant Protection	22%	93	21%	110	22%	1647
Older Drivers	14%	60	14%	72	17%	1280
Young Drivers	17%	73	17%	87	13%	983
Distracted Driving	13%	54	11%	57	N.A	N.A
Impaired Driving	9%	38	10%	54	23%	1747

*Values in Bold red color indicate the highest percentage category; N.A - No Data Available

LRSP PROCESS
Step 4: Select Focus Facility



Level 1	KABCO Crashes
Level 2	K, A Crashes
PEER GROUP	
3SG	3 - Leg Signalized
3 MST	3 - Leg Minor Road Stop Controlled
4 SG	4 - Leg Signalized
4 AST	4 - Leg All Way Stop Controlled
4 MST	4 - Leg Minor Road Stop Controlled
CRASH TYPE ABBREVIATIONS	
ANG	ANGLE
BAC	BACKING
HO	HEAD ON
NON	NON COLLISION
RE	REAR END
R TO R	REAR TO REAR
R TO S	REAR TO SIDE
SSM	SIDE SWIPE MEETING
SSO	SIDE SWIPE OVERTAKING
U	UNKNOWN

Highlighted Text – Largest Proportion in Category Level

LRSP PROCESS
Step 4: Select Focus Facility

LOCAL ROAD SAFETY PLAN - CRASH DATA TREE

SEGMENTS

Local and State Road Crashes

KABCO	13,908
K, A	420

Segments

7,204	52%
229	55%

3T

41	1%
1	0%

Crash Type Breakdown				
ANG	18	44%	1	100%
BAC	0	0%	0	0%
HO	2	5%	0	0%
NON	9	22%	0	0%
RE	8	20%	0	0%
R TO R	0	0%	0	0%
R TO S	0	0%	0	0%
SSM	1	2%	0	0%
SSO	1	2%	0	0%
U	2	5%	0	0%

2L

387	5%
13	6%

Crash Type Breakdown				
ANG	210	54%	3	23%
BAC	10	3%	0	0%
HO	5	1%	0	0%
NON	69	18%	6	46%
RE	57	15%	3	23%
R TO R	0	0%	0	0%
R TO S	0	0%	0	0%
SSM	12	3%	0	0%
SSO	17	4%	0	0%
U	7	2%	1	8%

3R

0	0%
0	0%

Crash Type Breakdown				
ANG	0	0%	0	0%
BAC	0	0%	0	0%
HO	0	0%	0	0%
NON	0	0%	0	0%
RE	0	0%	0	0%
R TO R	0	0%	0	0%
R TO S	0	0%	0	0%
SSM	0	0%	0	0%
SSO	0	0%	0	0%
U	0	0%	0	0%

4T

2	0%
0	0%

Crash Type Breakdown				
ANG	1	50%	0	0%
BAC	0	0%	0	0%
HO	0	0%	0	0%
NON	1	50%	0	0%
RE	0	0%	0	0%
R TO R	0	0%	0	0%
R TO S	0	0%	0	0%
SSM	0	0%	0	0%
SSO	0	0%	0	0%
U	0	0%	0	0%

3L

0	0%
0	0%

Crash Type Breakdown				
ANG	0	0%	0	0%
BAC	0	0%	0	0%
HO	0	0%	0	0%
NON	0	0%	0	0%
RE	0	0%	0	0%
R TO R	0	0%	0	0%
R TO S	0	0%	0	0%
SSM	0	0%	0	0%
SSO	0	0%	0	0%
U	0	0%	0	0%

Level 1	KABCO Crashes
Level 2	K, A Crashes
Highlighted	Largest Proportion in Category
PEER GROUP	
2L	2 - Lane Undivided Roadway
3L	3 - Lane Undivided Roadway
3R	3 - Lane Divided Roadway
3T	2 - Lane Divided Roadway with 2-way Left Turn Lane
4L	4 - Lane Undivided Roadway
4R	4 - Lane Divided Roadway
4T	3 - Lane Divided Roadway with 2 - way Left Turn Lane
5R	5 - Lane Divided Roadway
5T	4 - Lane Divided Roadway with 2 -way Left Turn Lane
6R	6 Lane Divided Roadway
6T	5 - Lane Divided Roadway with 2 - way Left Turn Lane
7T	6 - Lane Divided Roadway with 2 - way Left Turn Lane
8R	8 - Lane Divided Roadway
CRASH TYPE ABBREVIATIONS	
ANG	ANGLE
BAC	BACKING
HO	HEAD ON
NON	NON COLLISION
RE	REAR END
R TO R	REAR TO REAR
R TO S	REAR TO SIDE
SSM	SIDE SWIPE MEETING
SSO	SIDE SWIPE OVERTAKING
U	UNKNOWN

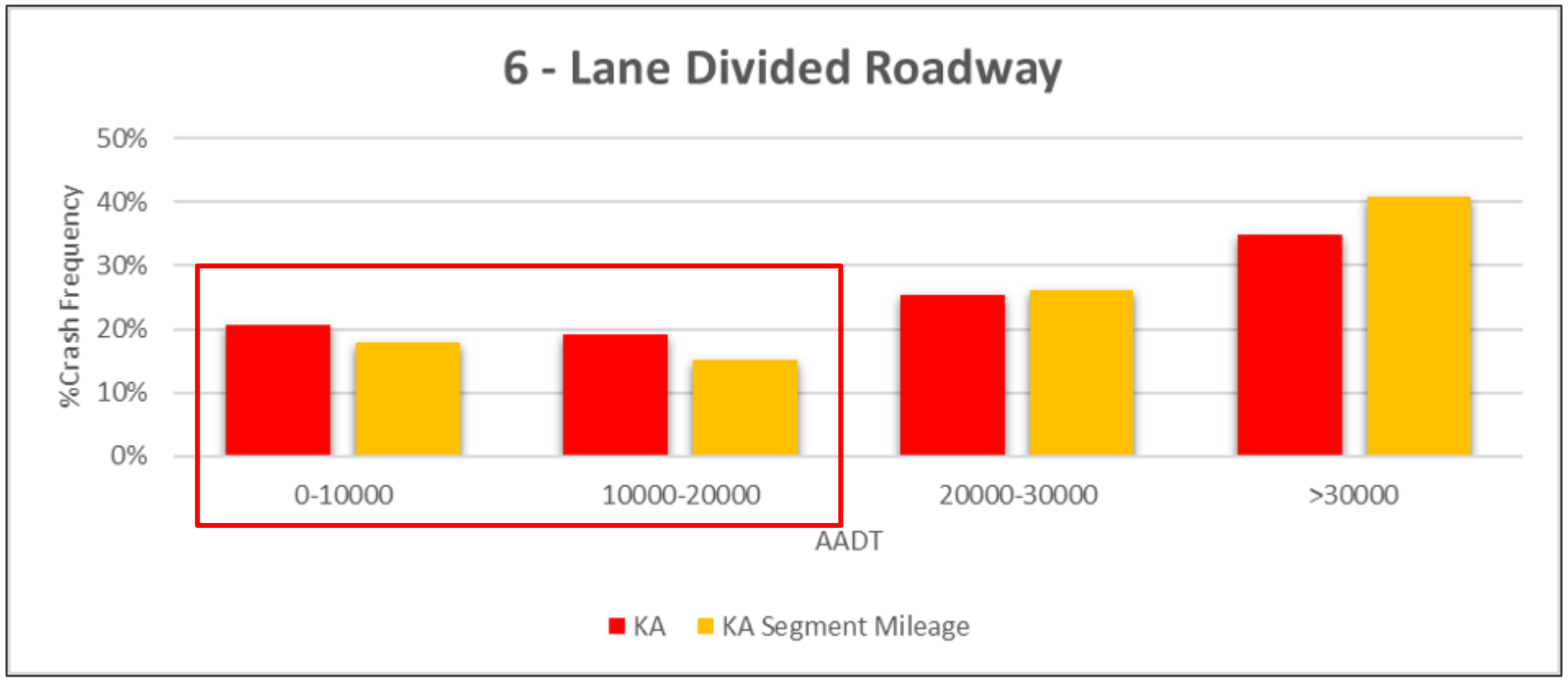
Highlighted Text – Largest Proportion in Category Level

LRSP PROCESS
Step 5: Select Risk Factors

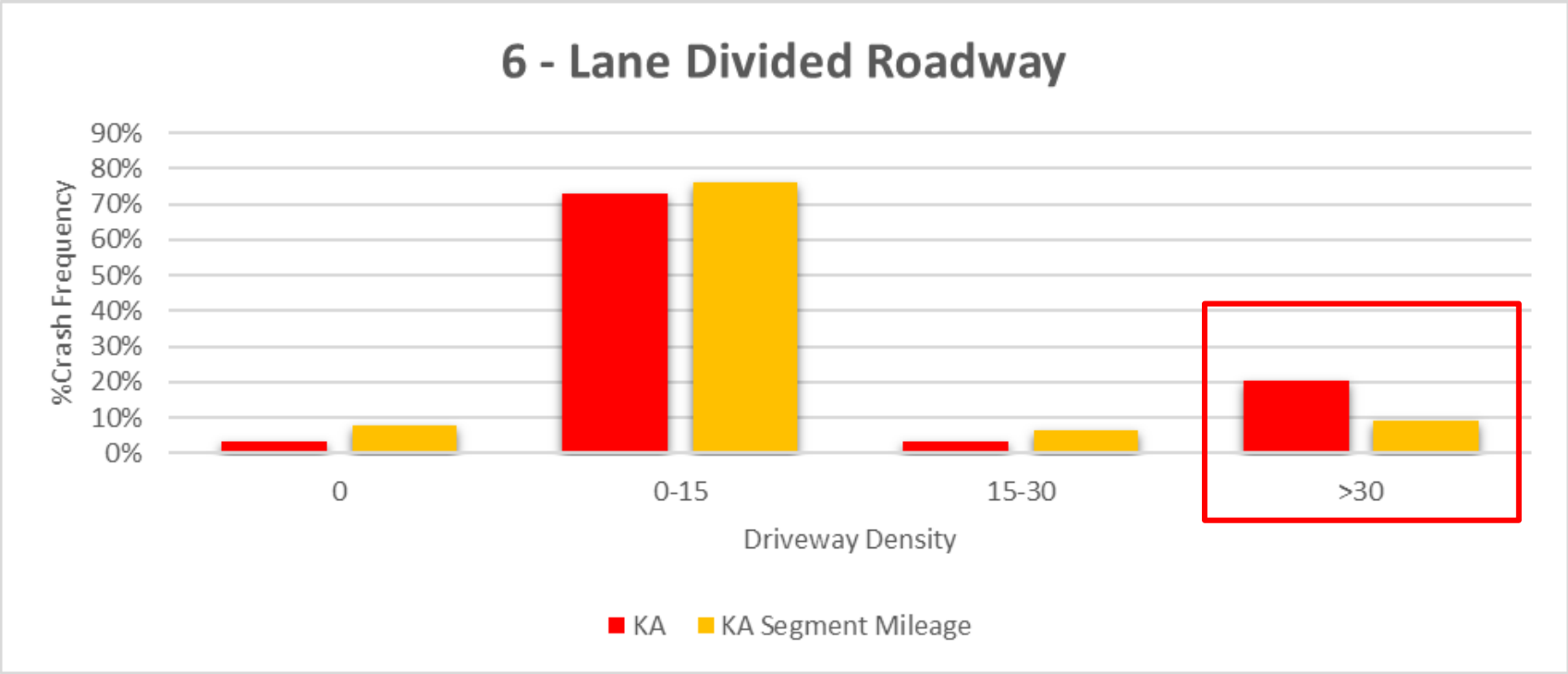
This step involves selecting high-risk roadway features correlated with specific severe crash types

Segments risk factors include:	Intersections risk factors include:
▪ Speed Limit ▪ Annual Average Daily Traffic (AADT) ▪ Median Width ▪ Median Type ▪ Driveway Density ▪ Speed Limit ▪ School Proximity ▪ Bus Stop Density ▪ Equity	▪ Major and Minor Roads AADT product ▪ KA Crash Frequency ▪ Number of Thru Lanes ▪ Median Width ▪ Median Type ▪ Left Turn Lane on Major Road ▪ Left Turn Lane on Minor Road ▪ Right Turn on Major Road ▪ Bus Stop Proximity ▪ Equity

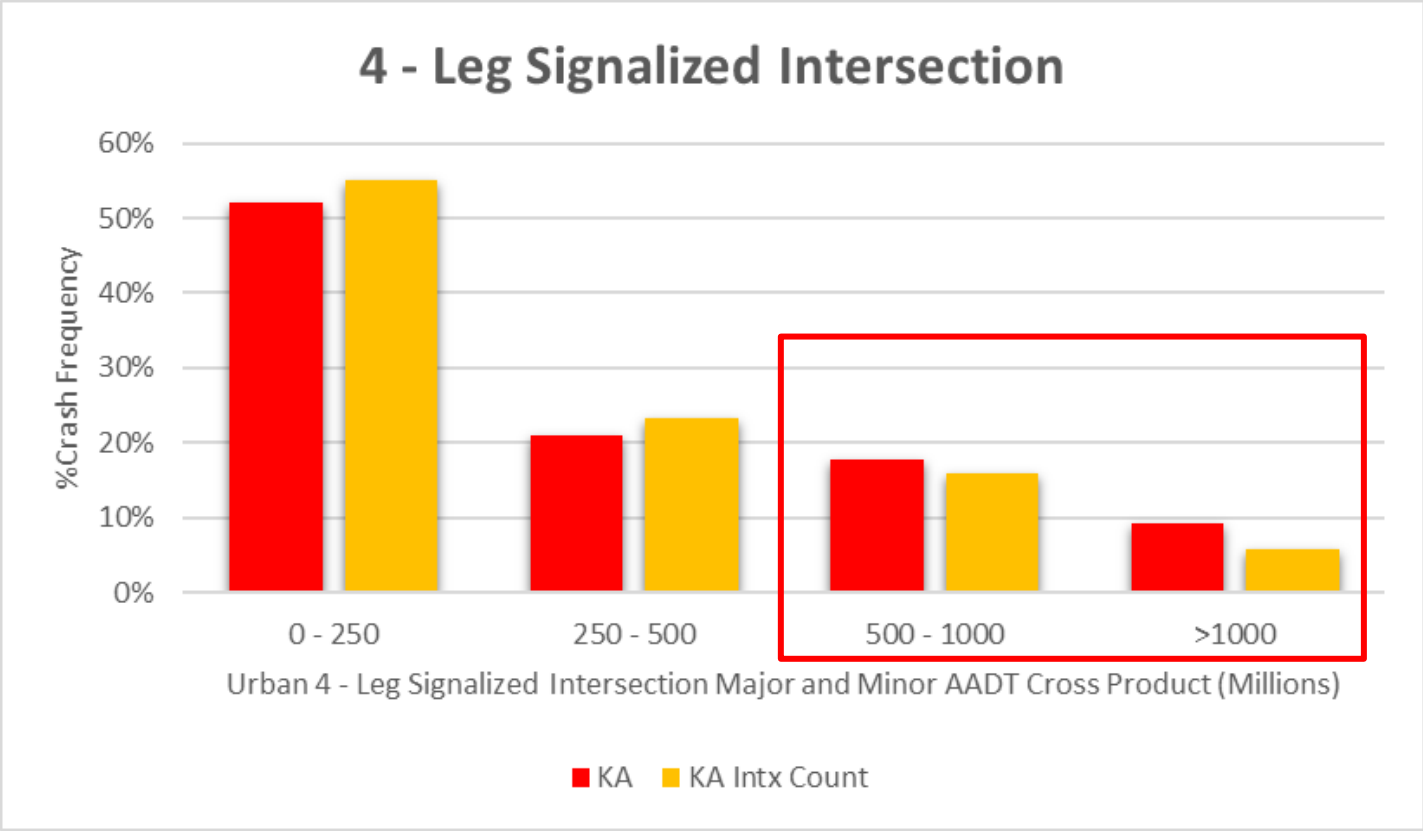
LRSP PROCESS
Step 5: Risk Factors – Annual Average Daily Traffic (AADT)



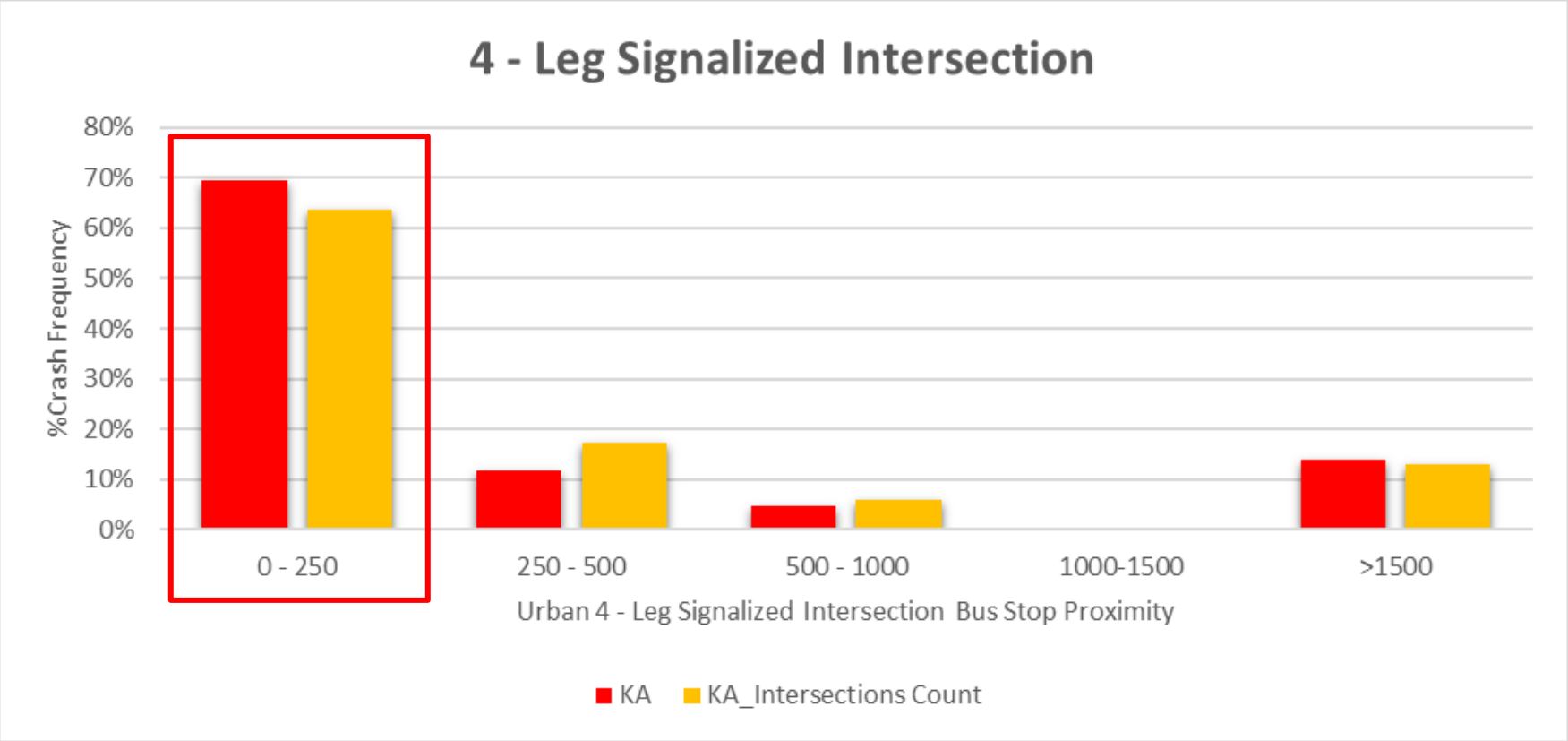
LRSP PROCESS
Step 5: Risk Factors – Driveway Density



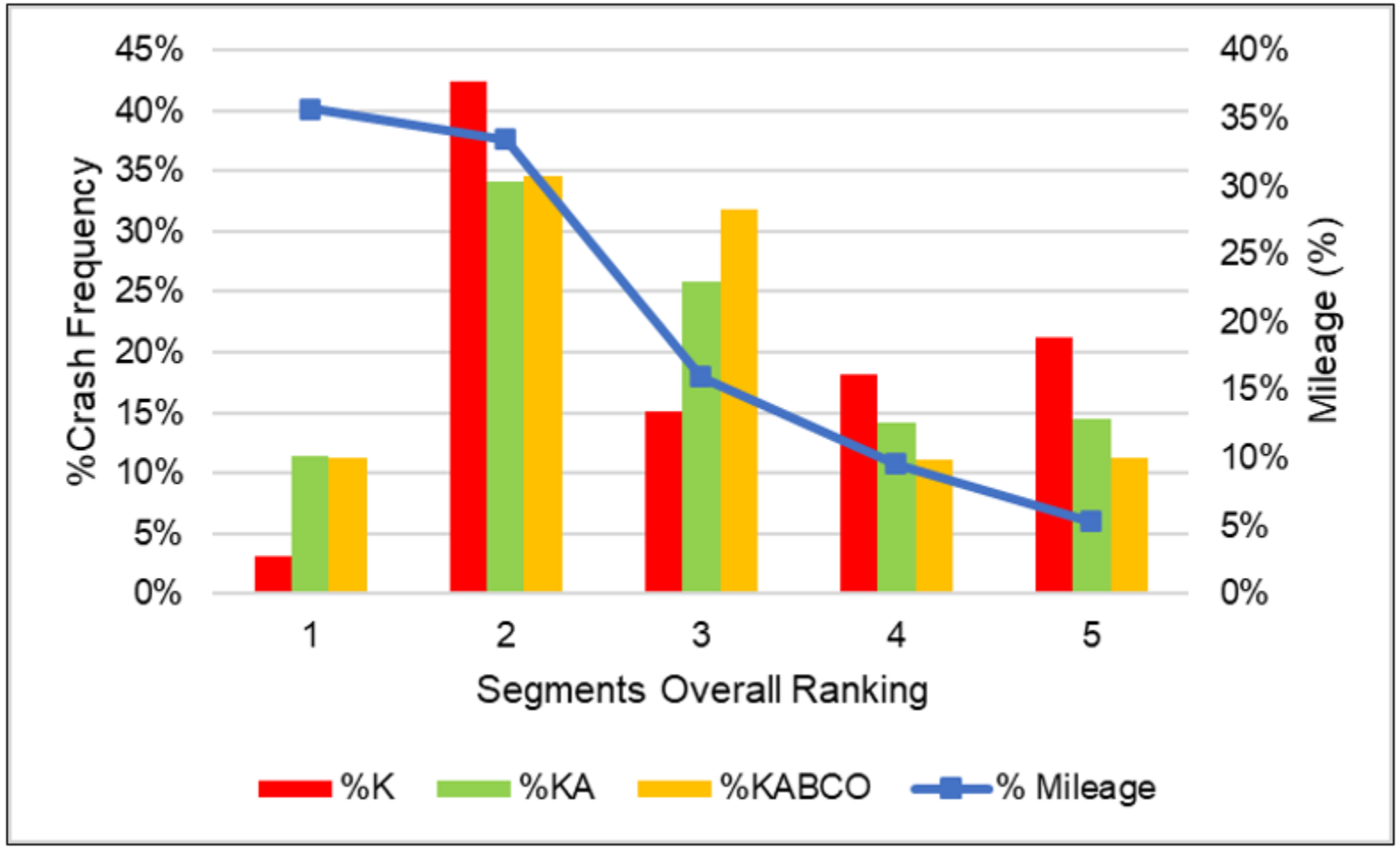
LRSP PROCESS
Step 5: Risk Factors – AADT Cross Product



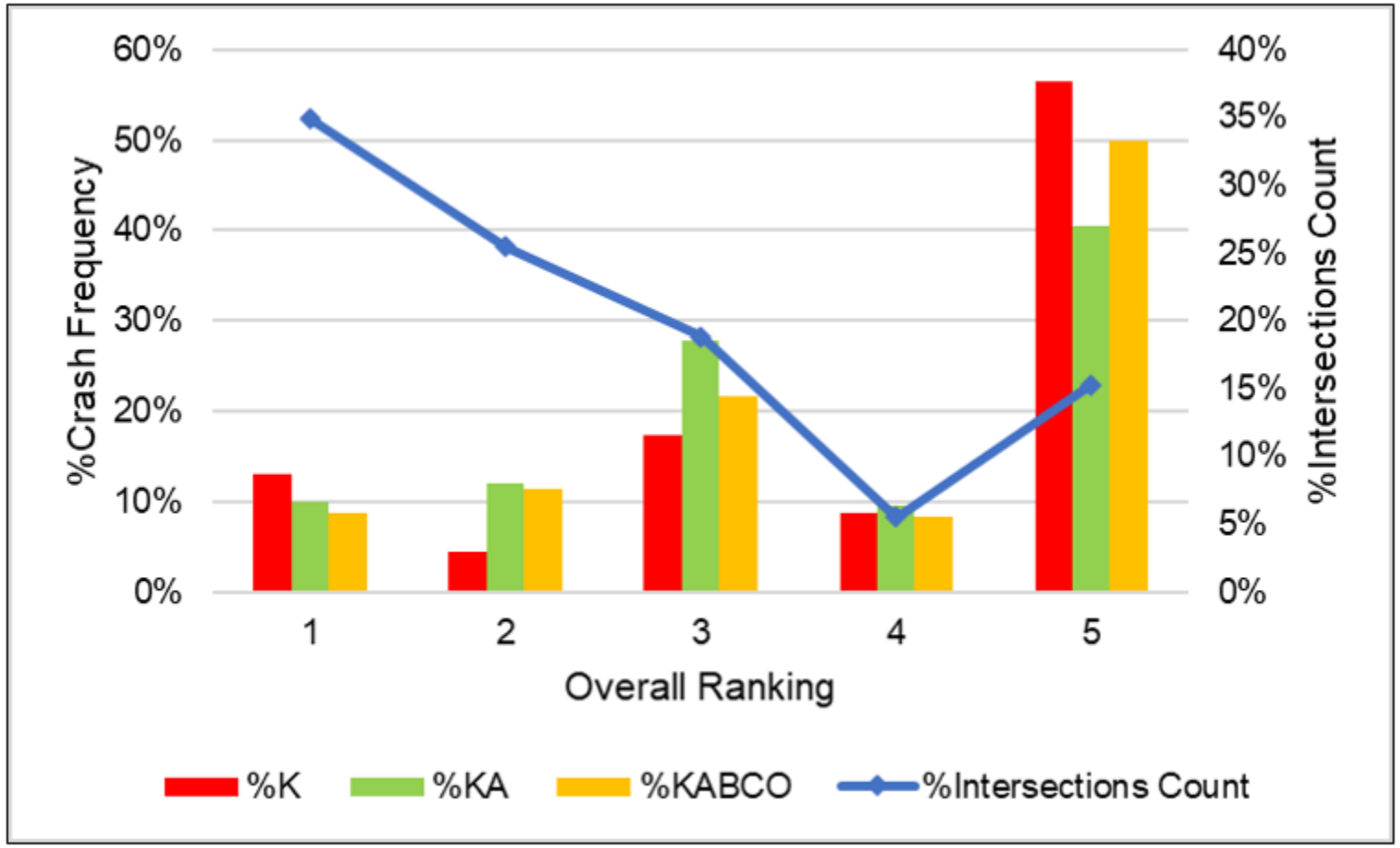
LRSP PROCESS
Step 5: Risk Factors – Bus Stop Proximity



LRSP PROCESS
Step 5: Risk Factors – Results for Segments



LRSP PROCESS
Step 5: Risk Factors – Results for Intersections



LRSP PROCESS
Step 5: Risk Factors – Segments AADT Ranges

Segment Peer Group	AADT Range	
	Low	High
2 - Lane Undivided Roadway (2L)	1,000	8,100
3 - Lane Undivided Roadway (3L)	-	7,450
3 - Lane Divided Roadway (3R)	-	2,950
2 - Lane Divided Roadway with 2-way Left Turn Lane (3T)	1,800	8,000
4 - Lane Undivided Roadway (4L)	5,650	12,825
4 - Lane Divided Roadway (4R)	3,000	28,700
3 - Lane Divided Roadway with 2 - way Left Turn Lane (4T)	-	3,000
5 - Lane Divided Roadway (5R)	5,000	46,000
4 - Lane Divided Roadway with 2 -way Left Turn Lane (5T)	1,800	22,300
6 Lane Divided Roadway (6R)	3,000	66,000
5 - Lane Divided Roadway with 2 - way left turn lane (6T)	-	3,900
6 - Lane Divided Roadway with 2 - way Left turn lane (7T)	3,000	63,000
8 - Lane Divided Roadway (8R)	15,600	33,500

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LRSP PROCESS
Step 5: Intersections AADT Cross Product

Intersections Peer Group	AADT Cross Product Range (Millions)	
	Low	High
4 – Leg Signalized Intersection (4SG)	18	145
3 - Leg Signalized Intersection (3SG)	18	455
4 – Leg All Way Stop Controlled (4AST)	3	83
4 – Leg Minor Road Stop Controlled (4MST)	4	168
3 – Leg Minor Road Stop Controlled (3MST)	4	176

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LRSP PROCESS
Step 5: Risk Factors

Category	Weight (Points)										
	0	1	2	3	4	5	6	7	8	9	10
KA Crashes / KABCO Crashes	≥ 0% to <10%	≥ 10% to <20%	≥ 20% to <30%	≥ 30% to <40%	≥ 40% to <50%	≥ 50% to <60%	≥ 60% to <70%	≥ 70% to <80%	≥ 80% to <90%	≥ 90% to <100%	100%
KA / KABCO Crash Over-representation	0%	≥ 0% to <2%	≥ 2% to <3%	≥ 3% to <4%	≥ 4% to <5%	≥ 5% to <6%	≥ 6% to <7%	≥ 7% to <8%	≥ 8% to <9%	≥ 9% to <10%	≥ 10% to <100%

LRSP PROCESS
Step 5: Risk Factors

- For example, a KABCO proportion of 30-40% would receive a weight of 3 points.
- An over-representation of 3-4% would receive a weight of 3 points.
- Approach allows for the prioritization of locations with higher concentrations of crashes and over-representation, helping to identify areas in need of safety improvements.

Risk Factors		Five Lane Divided		
		KA	KABCO	KA|KABCO
Segment_AADT	5000	0	0	0
Segment_AADT	10000	0	0	0
Segment_AADT	20000	1	10	11
Segment_AADT	>20000	0	10	10
Driveway Density	0	0	0	0
Driveway Density	15	0	0	0
Driveway Density	30	10	0	10
Driveway Density	>30	10	10	20

LRSP PROCESS
Step 5:
Intersections Risk Factors and Ranking

Risk Factor		Urban 3SG KA|KABCO	Urban 3ST KA|KABCO	Urban 4AST KA|KABCO	Urban 4MST KA|KABCO	Urban 4SG KA|KABCO
AADT X Product	250	1	0	0	1	5
AADT X Product	500	8	0	0	0	9
AADT X Product	1000	0	0	0	0	14
AADT X Product	>1000	0	0	0	0	8
Bus Stop Proximity	250	19	14	18	21	24
Bus Stop Proximity	500	0	0	10	0	0
Bus Stop Proximity	1000	0	10	0	0	1
Bus Stop Proximity	1500	0	0	0	0	0
Bus Stop Proximity	>1500	0	0	0	0	1
Thru Lanes on Major	2	0	0	0	0	0
Thru Lanes on Major	4	0	10	10	0	2
Thru Lanes on Major	6	17	11	9	20	22
Thru Lanes on Major	>6	0	0	0	0	1
Median Type	Unrestricted	0	0	0	0	0
Median Type	Restricted	4	18	20	21	26
Median Type	Restricted + Unrestricted	0	10	1	0	0
Median Width	0	0	0	0	0	0
Median Width	10	0	0	0	0	1
Median Width	20	2	16	20	21	22
Median Width	>20	10	0	0	0	0
Left Turn Major	Major 1 & 2	20	20	18	21	14
Left Turn Major	Major 1	0	0	0	0	1
Left Turn Major	Major 2	0	10	0	1	3
Left Turn Major	None	1	0	0	0	3
Left Turn Minor	Minor 1 & 2	10	0	14	7	17
Left Turn Minor	Minor 1	3	10	0	0	0
Left Turn Minor	Minor 2	14	1	0	11	1
Left Turn Minor	None	1	2	0	1	0
Right Turn Major	Major 1 & 2	10	6	10	20	8
Right Turn Major	Major 1	0	0	1	0	0
Right Turn Major	Major 2	10	3	17	1	1
Right Turn Major	None	4	5	0	0	10
School Proximity	250	0	0	0	0	0
School Proximity	500	0	0	0	0	0
School Proximity	1000	0	0	0	0	0
School Proximity	1500	0	0	0	0	0
School Proximity	>1500	10	10	11	18	19
Right Turn Minor	Minor 1 & 2	0	0	10	1	16
Right Turn Minor	Minor 1	3	14	0	0	3
Right Turn Minor	Minor 2	13	7	5	0	0
Right Turn Minor	None	1	0	0	7	8

Low High

LRSP PROCESS
Step 5: Segments Risk Factors and Ranking

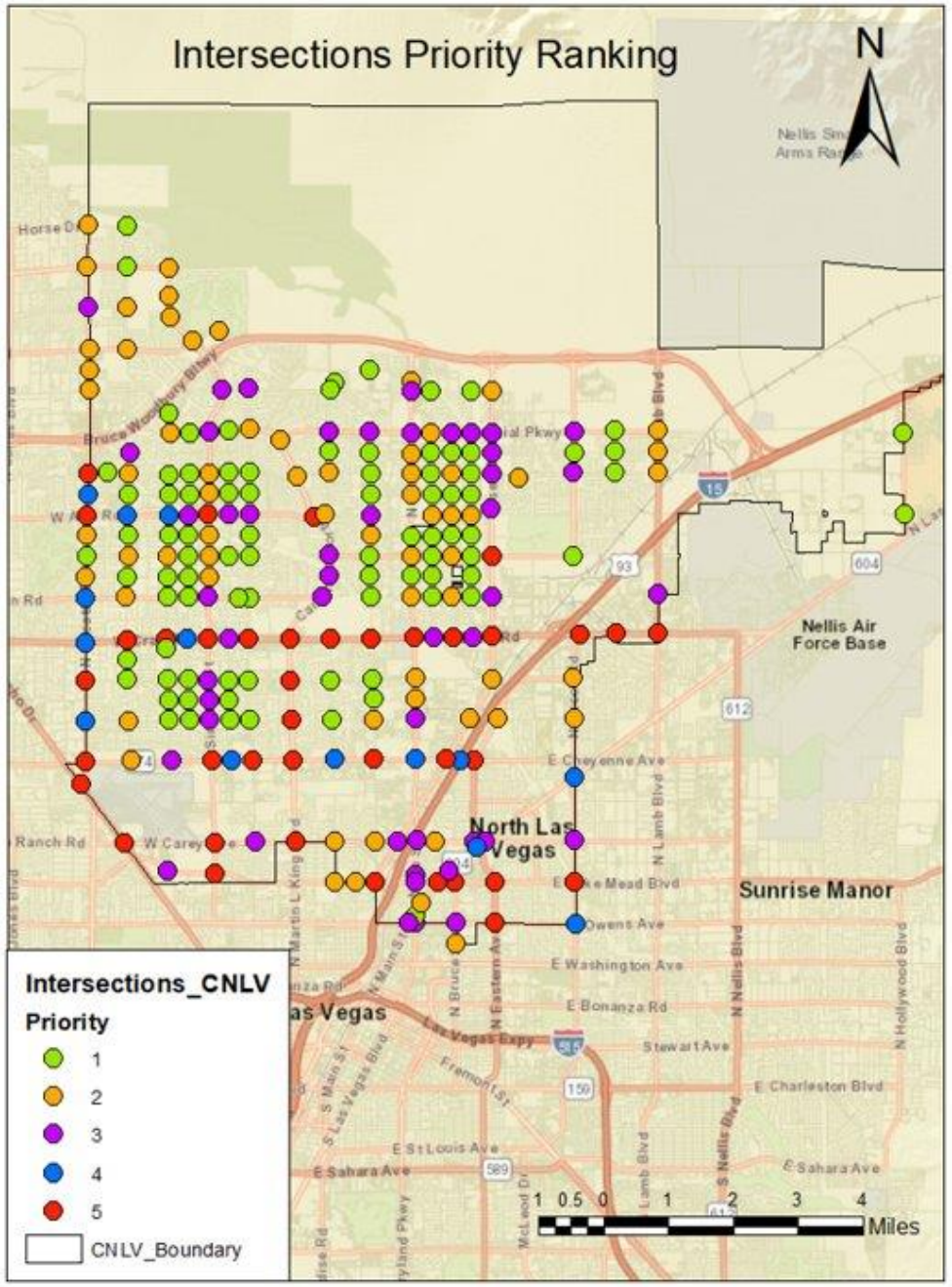
Risk Factors		2L KA|KABCO	3L KA|KABCO	3R KA|KABCO	3T KA|KABCO	4L KA|KABCO	4R KA|KABCO	4T KA|KABCO	5R KA|KABCO	5T KA|KABCO	6R KA|KABCO	6T KA|KABCO	7T KA|KABCO	8R KA|KABCO
Segment_AADT	5000	1	0	0	0	0	0	0	0	0	0	0	0	0
Segment_AADT	10000	0	0	0	10	0	1	0	0	5	3	0	0	0
Segment_AADT	20000	0	0	0	0	10	20	0	11	6	14	0	0	10
Segment_AADT	>20000	0	0	0	0	0	1	0	10	9	4	0	13	0
Median Width	0	0	0	0	0	0	0	0	0	4	0	0	3	0
Median Width	10	0	0	0	0	0	1	0	0	0	2	0	0	0
Median Width	20	0	0	0	0	0	2	0	11	0	10	0	0	0
Median Width	>20	0	0	0	0	0	6	0	0	0	4	0	0	0
Driveway Density	0	14	0	0	10	0	0	0	0	1	0	0	0	5
Driveway Density	15	0	0	0	0	0	10	0	0	0	4	0	0	0
Driveway Density	30	8	0	0	0	0	4	0	10	1	0	0	12	0
Driveway Density	>30	3	0	0	0	0	15	0	20	18	21	0	22	0
Median Type	Restricted	0	0	0	0	0	0	0	0	0	7	0	0	0
Median Type	Unrestricted	0	0	0	0	0	0	0	0	4	0	0	3	0
Speed Limit	25	8	0	0	0	0	0	0	0	2	0	0	0	0
Speed Limit	35	5	0	0	10	0	10	0	10	2	2	0	0	0
Speed Limit	45	0	0	0	0	0	10	0	10	7	8	0	7	0
Speed Limit	>45	0	0	0	0	0	0	0	0	0	0	0	0	0
School Proximity	250	0	0	0	0	0	0	0	0	0	0	0	0	0
School Proximity	500	3	0	0	0	0	0	0	0	1	0	0	0	0
School Proximity	1000	5	0	0	10	10	1	0	0	11	1	0	0	0
School Proximity	>1000	1	0	0	0	0	17	0	0	5	8	0	22	10
Bus Stop Density	0	0	0	0	0	0	1	0	0	3	1	0	0	0
Bus Stop Density	15	20	0	0	0	0	10	0	6	10	13	0	2	0
Bus Stop Density	30	0	0	0	10	0	19	0	0	0	16	0	20	0
Bus Stop Density	>30	0	0	0	0	0	0	0	20	0	6	0	0	0

Low — High

LRSP PROCESS
Step 5: Intersections Overall Ranking

Priority Ranking	Category
1	Low
2	Medium
3	Moderate
4	High
5	Very High

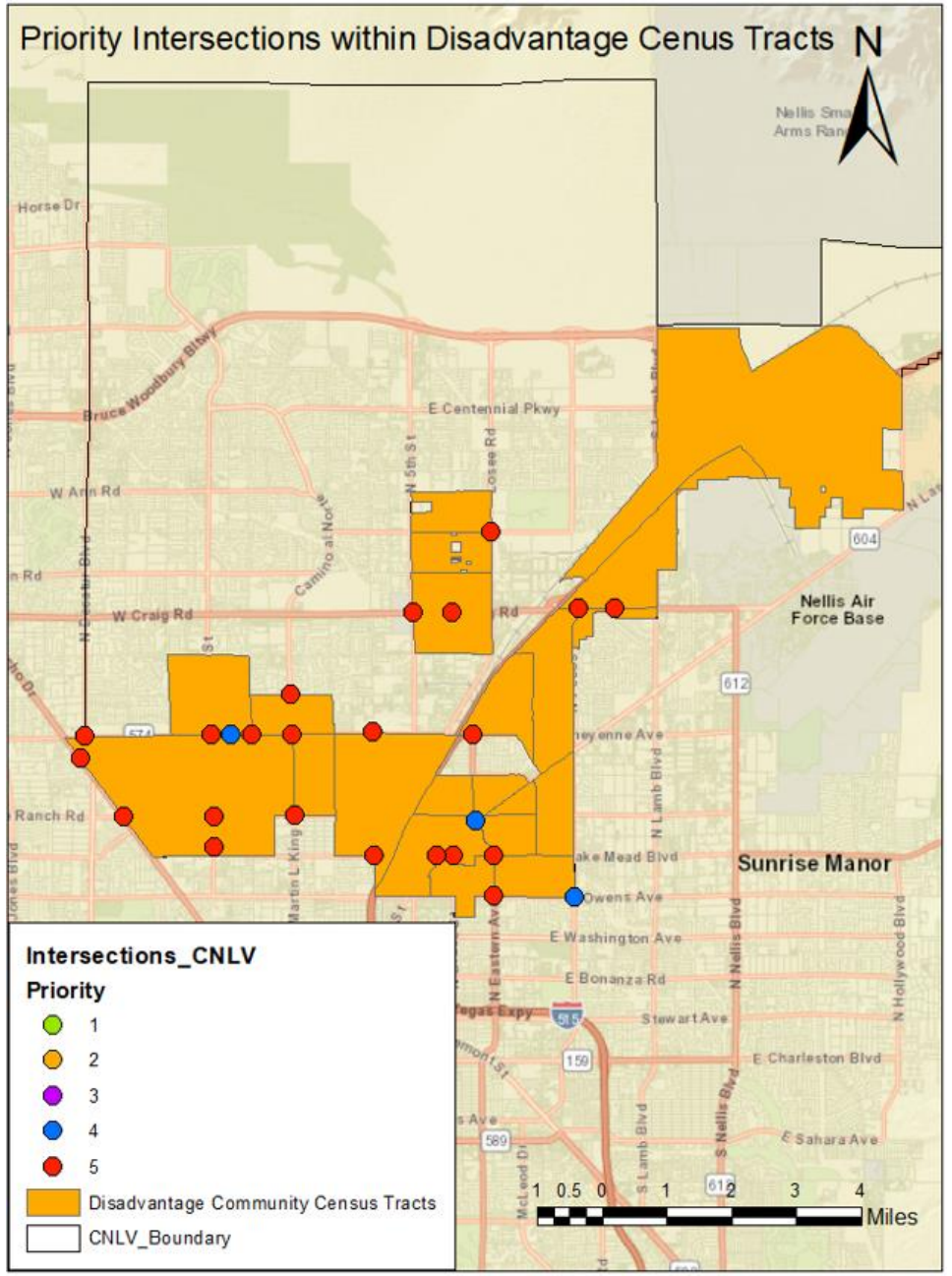
High Priority Intersections (21%) contribute to 50% of fatal and serious injury crashes



LRSP PROCESS
Step 5: Priority Intersections within Disadvantage Community Census Tracts

Priority Ranking	Category
1	Low
2	Medium
3	Moderate
4	High
5	Very High

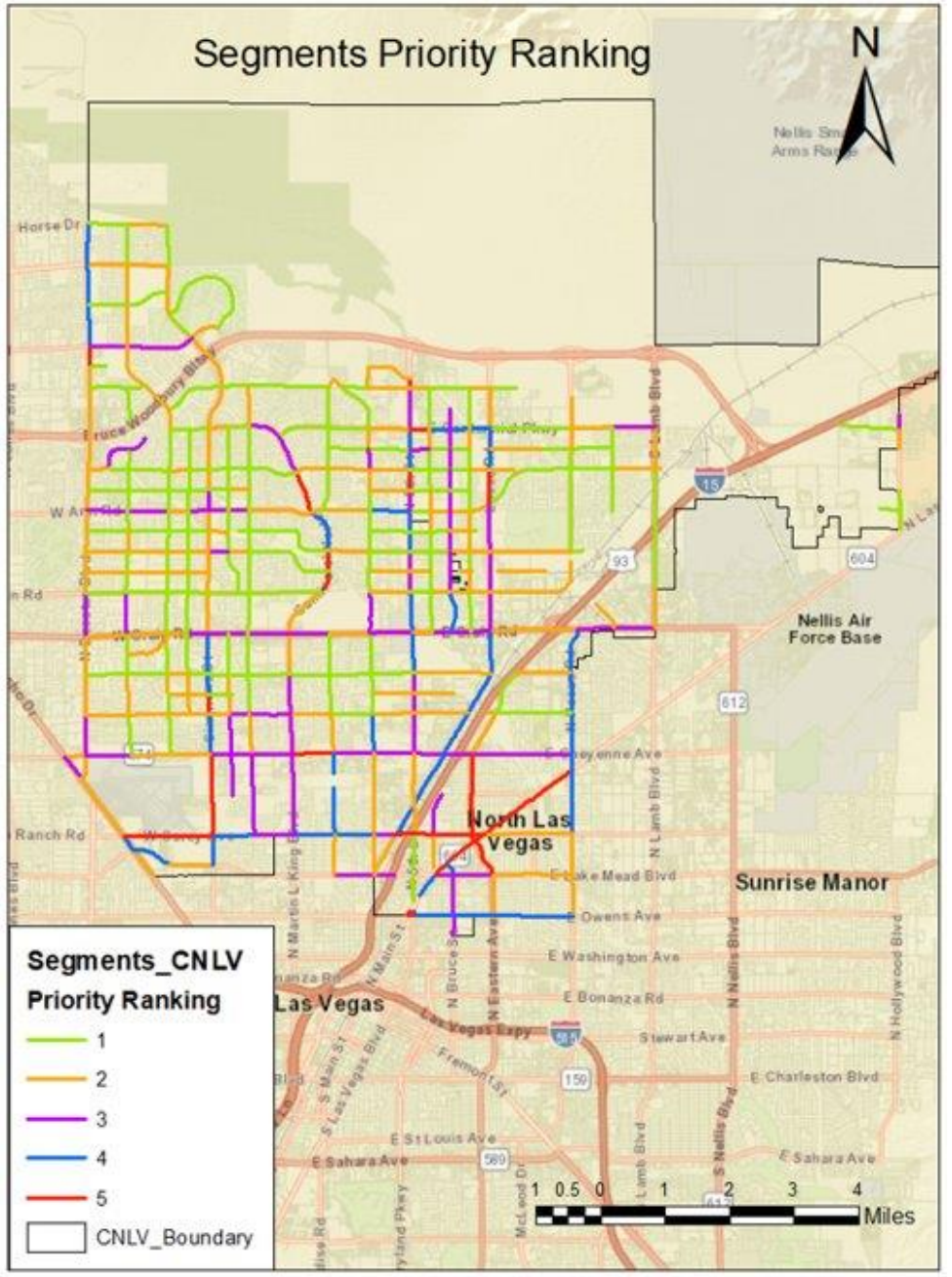
High Priority Intersections (10%) within Disadvantage Community Census Tracts contribute to 27% of fatal and serious injury crashes



LRSP PROCESS
Step 5: Segments Overall Ranking

Priority Ranking	Category
1	Low
2	Medium
3	Moderate
4	High
5	Very High

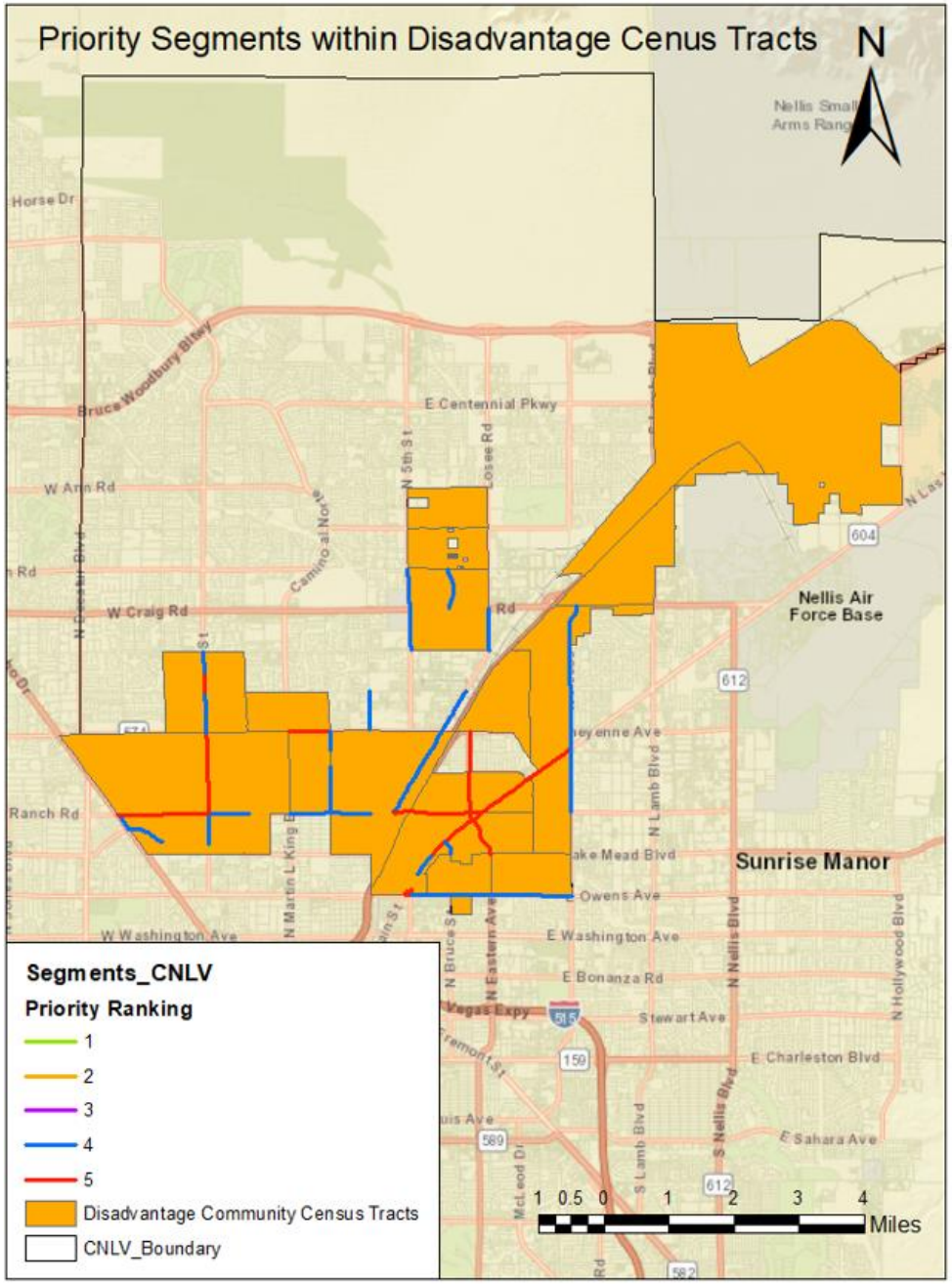
High Priority Segments (15%) contribute to 29% of fatal and serious injury crashes



LRSP PROCESS
Step 5: Priority Segments within Disadvantaged Community Census Tracts

Priority Ranking	Category
1	Low
2	Medium
3	Moderate
4	High
5	Very High

High Priority Segments (11%) within Disadvantage Community Census Tracts contribute to 25% of fatal and serious injury crashes



LRSP PROCESS
Step 6: Priority Location – Intersections

Cheyenne Avenue and Losee Road

- PG: 4 Leg Signalized Intersection
- Major AADT: 63,000
- Minor AADT: 15,850
- Located in Disadvantage Community: No
- Fatal Crashes (K): 1
- Fatal and Incapacitating Injury (KA) Crashes: 3
- KABCO Crashes: 215
- Priority Ranking: 5

LRSP PROCESS
Step 6: Priority Location – Intersections

W Cheyenne Avenue and Simmons Street

- PG: 4 Leg Signalized Intersection
- Major AADT: 42,000
- Minor AADT: 15,600
- Located in Disadvantage Community: Yes
- Fatal Crashes (K): 1
- Fatal and Incapacitating Injury (KA) Crashes: 6
- KABCO Crashes: 138
- Priority Ranking: 5

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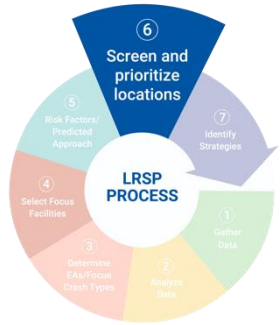
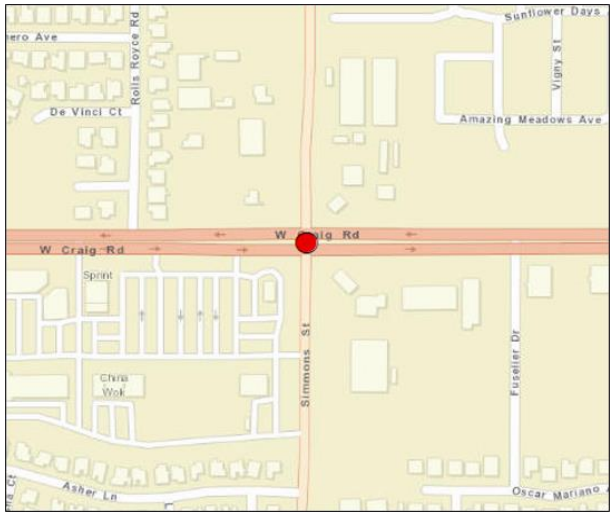
LRSP PROCESS
Step 6: Priority Location – Intersections



Craig Road and Simmons Street

- PG: 4 Leg Signalized Intersection
- Major AADT: 33,000
- Minor AADT: 12,550
- Located in Disadvantage Community: No
- Fatal Crashes (K): 2
- Fatal and Incapacitating Injury (KA) Crashes: 4
- KABCO Crashes: 136
- Priority Ranking: 5



LRSP PROCESS
Step 6: Priority Location – Intersections

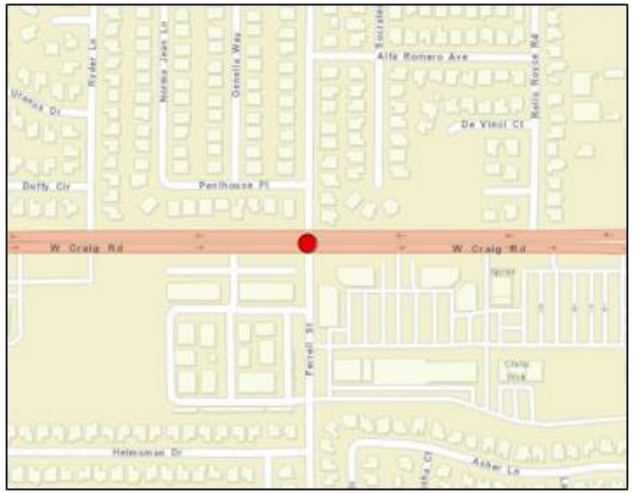
Civic Center Drive and Las Vegas Boulevard

- PG: 4 Leg Signalized Intersection
- Major AADT: 17,350
- Minor AADT: 14,900
- Located in Disadvantage Community: Yes
- Fatal Crashes (K): 2
- Fatal and Incapacitating Injury (KA) Crashes: 3
- KABCO Crashes: 95
- Priority Ranking: 4

LRSP PROCESS
Step 6: Priority Location – Intersections

Craig Road and Ferrell Street

- PG: 4 Leg Minor Road Stop Controlled
- Major AADT: 33,000
- Minor AADT: 3,000
- Located in Disadvantage Community: No
- Fatal Crashes (K): 0
- Fatal and Incapacitating Injury (KA) Crashes: 6
- KABCO Crashes: 81
- Priority Ranking: 4



LRSP PROCESS
Step 6: Priority Location – Segments

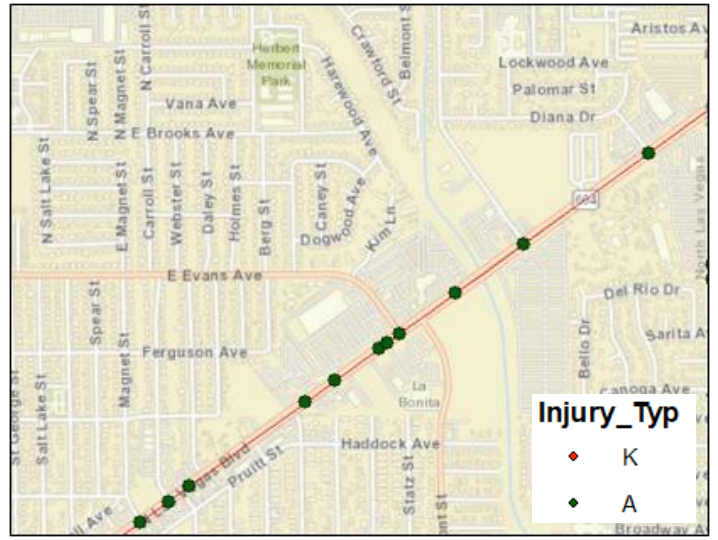
Civic Center Drive b/w Cheyenne and Carey Avenue

- PG: 4 -Lane Divided Roadway
- Major AADT: 16,300
- Located in Disadvantage Community: Yes
- Fatal Crashes (K): 2
- Fatal and Incapacitating Injury (KA) Crashes: 6
- KABCO Crashes: 173
- Priority Ranking: 5

LRSP PROCESS
Step 6: Priority Location – Segments

N Las Vegas Blvd b/w E Carey Ave and N Pecos Road

- PG: 4 Lane Divided Roadway
- Major AADT: 17,000
- Located in Disadvantage Community : Yes
- Fatal Crashes (K): 0
- Fatal and Incapacitating Injury (KA) Crashes: 12
- KABCO Crashes: 203
- Priority Ranking: 5

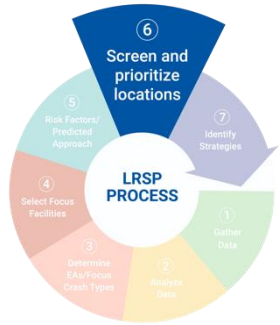


LRSP PROCESS
Step 6: Priority Location – Segments

W Carey Avenue between N Rancho Drive and Simmons St

- PG: 4 Lane Divided Roadway
- Major AADT: 13,000
- Located in Disadvantage Community : Yes
- Fatal Crashes (K): 1
- Fatal and Incapacitating Injury (KA) Crashes: 3
- KABCO Crashes: 62
- Priority Ranking: 5

LRSP PROCESS
Step 6: Priority Location – Segments



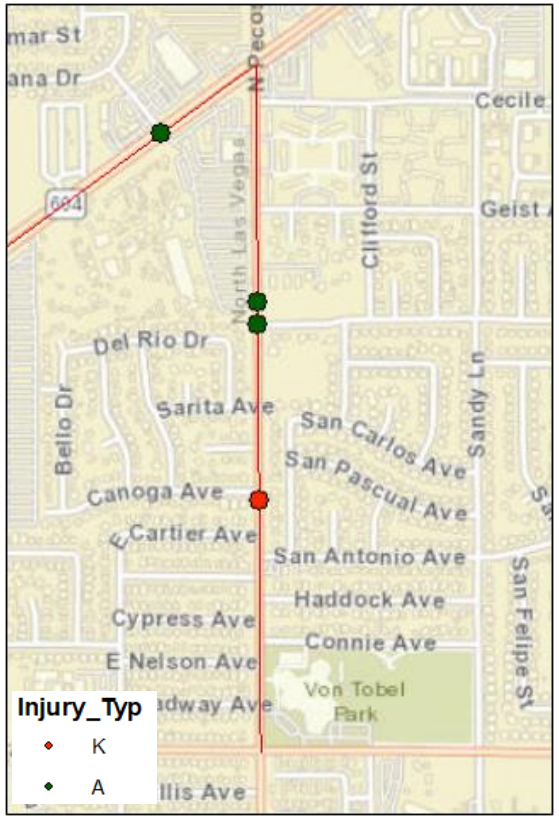
E Owens Avenue b/w Civic Center Drive and N Pecos Road

- PG: 4 Lane Divided Roadway with 2–way Left Turn Lane
- Major AADT: 16,700
- Located in Disadvantage Community : Yes
- Fatal Crashes (K): 1
- Fatal and Incapacitating Injury (KA) Crashes: 4
- KABCO Crashes: 79
- Priority Ranking: 4

LRSP PROCESS
Step 6: Priority Location – Segments

N Pecos Road between N Las Vegas Blvd and E Carey Avenue

- PG: 4 Lane Divided Roadway with 2–way Left Turn Lane
- Major AADT: 17,200
- Located in Disadvantage Community : Yes
- Fatal Crashes (K): 1
- Fatal and Incapacitating Injury (KA) Crashes: 3
- KABCO Crashes: 61
- Priority Ranking: 4



LRSP PROCESS
Step 7: Identify Strategies (work in progress)

Emphasis Area	Countermeasures	Combined CMF	Intersections	Crashes		Crashes prevented		Total	KA Benefits	KA Benefits per Site	Service Life	Benefits PV	Unit Cost	B/C Ratio
				K	A	K	A							
Signalized Intersection	Signal timing optimization	0.825	50	15	70	2.6	12.3	664.0	$37,246,300	$744,926	3	$1,954,921	$30,000	1.30
	Reduce curb radii	0.85	50	15	70	2.3	10.5	569.1	$31,925,400	$638,508	5	$2,618,009	$50,000	1.05
	Retroreflective backplates	0.9	50	15	70	1.5	7.0	379.4	$21,283,600	$425,672	3	$1,117,098	$10,000	2.23
	Upgraded Signal lens	0.95	50	15	70	0.8	3.5	189.7	$10,641,800	$212,836	3	$558,549	$10,000	1.12
	Restrict/eliminate turning maneuvers (including RTOR)	0.9	50	15	70	1.5	7.0	379.4	$21,283,600	$425,672	5	$1,745,339	$30,000	1.16
	Improve operations of pedestrian and bicycle facilities	0.85	50	15	70	2.3	10.5	569.1	$31,925,400	$638,508	10	$4,484,613	$30,000	2.99
	Provide left turn channelization	0.88	50	15	70	1.8	8.4	455.3	$25,540,320	$510,806	10	$3,587,690	$50,000	1.44
	Provide right turn channelization	0.88	50	15	70	1.8	8.4	455.3	$25,540,320	$510,806	10	$3,587,690	$50,000	1.44

LRSP Outline

CITY OF NORTH LAS VEGAS

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Local Road Safety Plan - CNLV

LRSP – Template Outline

Next Steps

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SAFE AND CONNECTED

CITY OF NORTH LAS VEGAS

Local Road Safety Plan - CNLV

Next Steps

- Public Opinion data collection in progress
- Draft LRSP report
- Second draft LRSP report
- Final LRSP report

Comments/Suggestions/Questions

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Thank you!

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