

# Ada County Highway District



LIVABLE STREETS PERFORMANCE MEASURES



# ABOUT ME





# ACKNOWLEDGMENTS



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Dave McKinney, Vice-President  
Jim D. Hansen, Commissioner  
Mary May, Commissioner  
Alexis Pickering, Commissioner

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Matt Vraspri

\*Bike and Pedestrian Performance Measure Advisory Sub-Committee Members

# THANK YOU TO APA IDAHO



**IDAHO DISCOVERED**

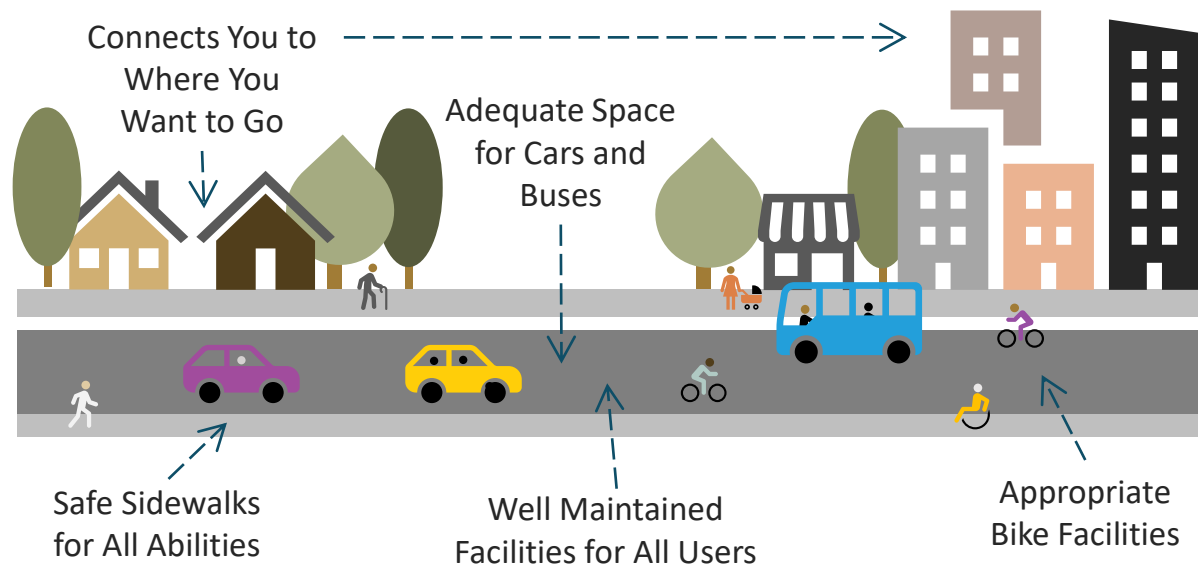
PLANNING FOR OPPORTUNITY  
BRACING FOR IMPACT

2021 GEM AWARD RECIPIENT

# THE WHAT

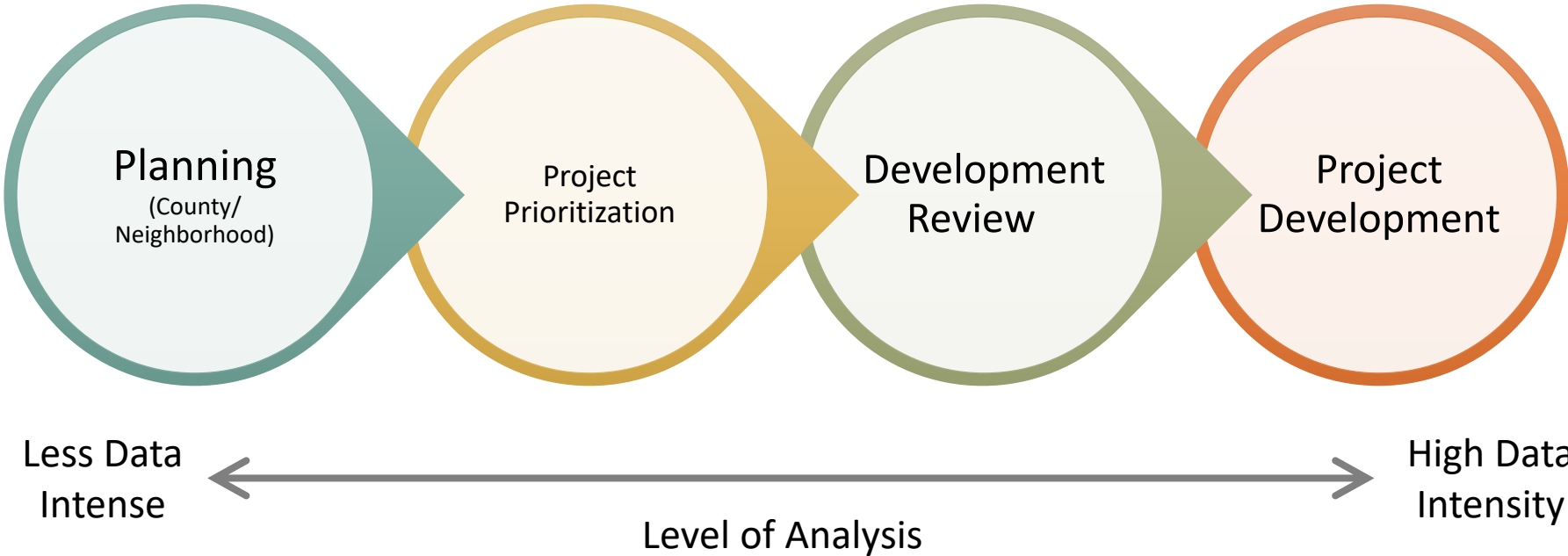
A **LIVABLE STREETS** Performance Measure is a single rating of the experience for each user group based on identified conditions that exist.

## ANATOMY OF A LIVABLE STREET



# THE WHAT

## SCALABLE ANALYSIS TOOL



# THE WHY



## ACHD COMMISSION

Kent Goldthorpe, President

Dave McKinney, Vice-President

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Alexis Pickering, Commissioner

## ACHD'S COMPLETE STREETS GUIDING PRINCIPLE

Streets, bridges and transit stops within Ada County should be designed, constructed, operated and maintained so that pedestrians, bicyclists, transit riders, motorists, and people of all ages and abilities can travel safely and independently. ([ACHD Policy Manual Section 3110.2](#))

# THE WHEN



PROJECT KICK-OFF

January 2021

INITIAL DRAFT

March 2021

ADOPTION DATE

June 2021



# THE GOAL



## TRANSPORTATION LAND USE INTEGRATION PLAN

Complete Streets Policy

Cost Share Ordinance

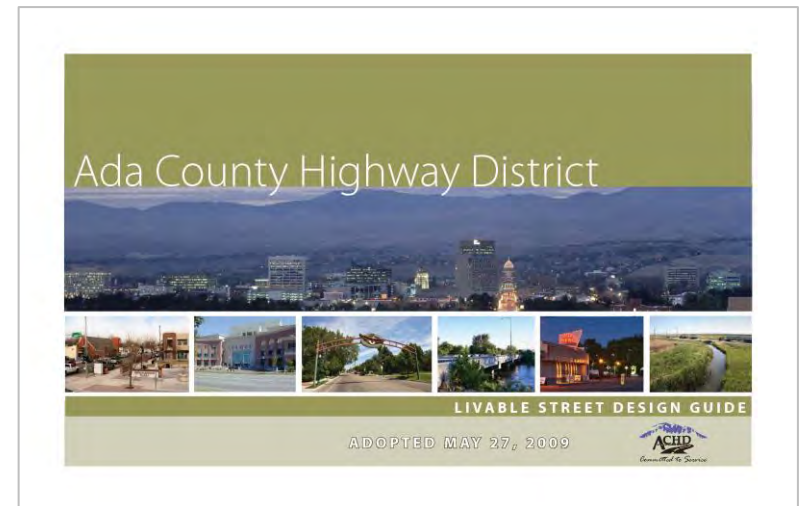
Master Street Map

Livable Streets Design Guide

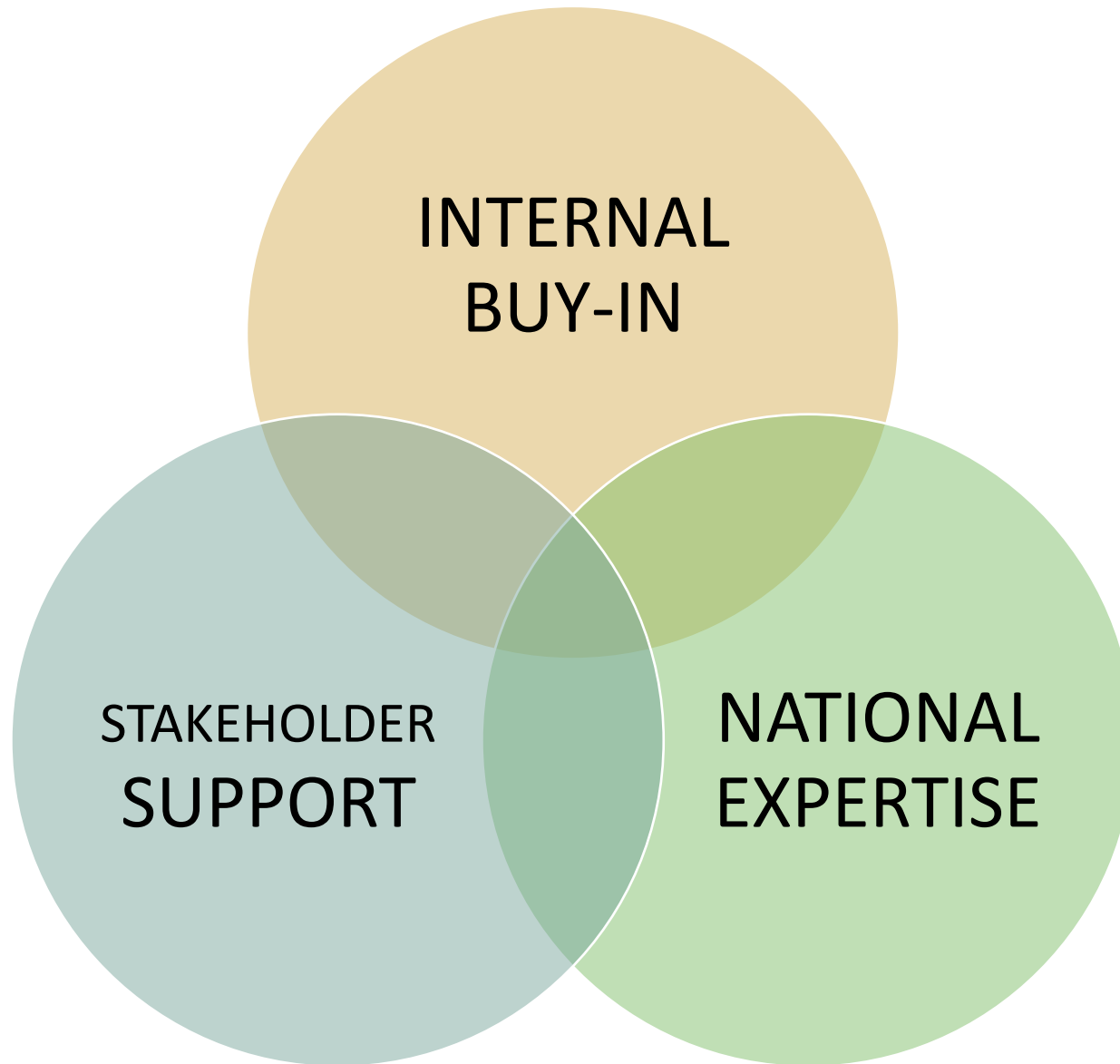
*\*NEW\** Livable Streets

Performance Measures

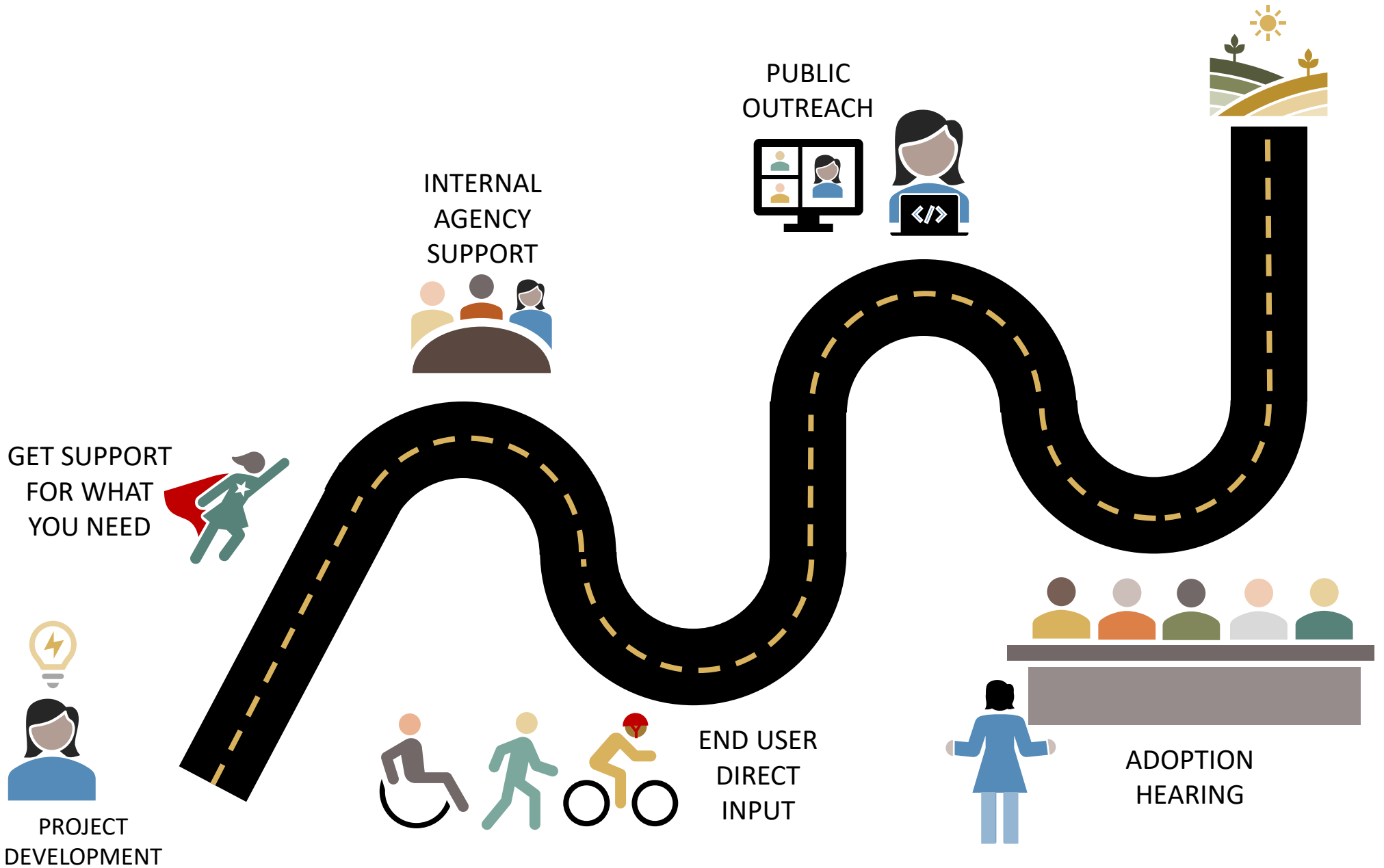
**GOAL ACHIEVED**  
Adopted by Resolution  
(June 23)



# THE HOW





# BRINGING EVERYONE ALONG







# END USER DIRECT INPUT

## SET REALISTIC EXPECTATIONS

 **Key Questions To Be Answered** 

- What does the rating tell us?
  - Capacity of the Facility?
  - Safety?
  - Quality of Facility?
  - Facility Appropriateness for Conditions?
  - Comfort of the Bicycling Experience?
- What conditions impact the rating?
- How is the rating used?
  - Prioritization of Projects?
  - Project Design?
  - Development Review?




 **Bicycle Infrastructure Roadways** 

**BICYCLE FACILITIES**

- Multi-Use Pathway
- Cycle Tracks
- Raised Bike Lanes
- Protected Bike Lanes
- Buffered Bike Lanes
- Standard Bike Lanes
- Low-Stress Bikeways



 **Bicycle Infrastructure Crossings** 

**INTERSECTIONS**

- Signal
- All-Way Stop
- Uncontrolled Intersection
- Roundabout

**MID-BLOCK**

- Pedestrian Hybrid Beacon or Signal
- Rectangular Rapid Flashing Beacon
- Marked Crosswalk
- Unmarked Crossing



# END USER DIRECT INPUT

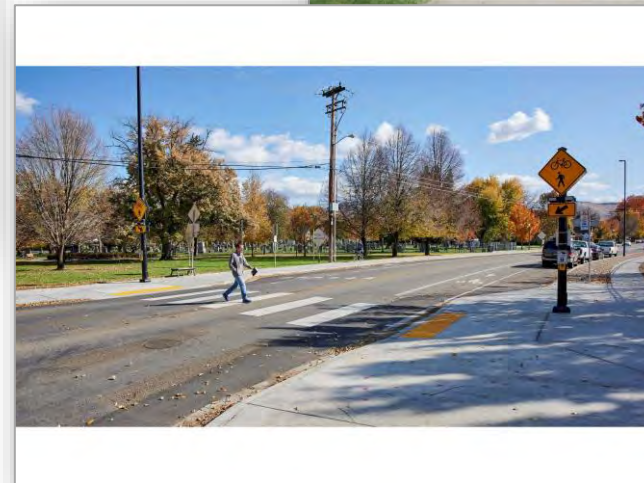
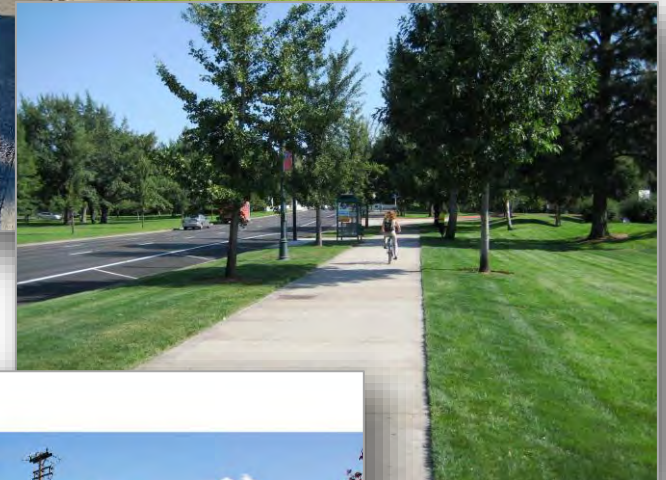
## ACTUALLY LISTEN



### Discussion Questions



Question	Bike Facility	Intersection	Mid-Block Crossing
1. What features make for a <b>safe</b> biking experience?	Speeds and Volumes, Traffic Calming Presence (Bikeways), Facility Type, Degree of Protection	Facility Width/Pinch Points (Bulbouts at non-all-way stops), Visibility at Intersection (concerns with parking blocking protected lanes)	Big enough bulbouts to keep parking away from crossing, Full signal better than a HAWK
2. What features make for a <b>comfortable</b> biking experience?	Facility Maintenance/Road Condition, Buffers (even painted) helps, Bus Stops (staging zones bad)	Green paint in crossover of bike lanes and car lanes, two stage crossing does not feel safe	Indicator to ped/bike of what HAWK is doing
3. What <b>design details</b> of the facility impact the biking experience?	Presence of a facility, sharrow placement outside door zone, narrowness better when a facility is present, Wayfinding signage, passing room for vehicles	Dashed lines at intersections?, Floating bike lanes (left of RTL) are concerning, paint continuing through the intersection, bike signals (legal?)	Width, Lighting, Bike push buttons



# END USER DIRECT INPUT



## REVIEW ALTERNATIVES

		MODE	BICYCLE		PEDESTRIAN		
			BLTS	BLOS	PLTS	PLOS	PEQI
Measure Purpose	Network Level Planning		●	●	●	●	●
	Corridor Level Design		●	○	●	○	●
	Prioritization		●	●	●	●	○
What is measured?	Comfort		●	●	●	●	●
	Safety		●	●	●	●	◐
	Intersections		●	◐	●	◐	◐
Other Factors	Flexibility		●	○	●	○	●
	Replicability		◐	◐	◐	◐	○



# END USER DIRECT INPUT

## ADJUST FOR LOCAL EXPERIENCE





### Bike Level of Traffic Stress Draft Criteria

Bike Lane + Buffered Lane Table (No Adjacent Parking)

# of Travel Lanes	Bike Lane Width (Includes Buffer)	Posted Speeds						
		20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50+ mph
2 - 3	6'+	LTS 1	LTS 1	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4
	4' or 5'	LTS 2	LTS 2	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4
4-5	6'+	LTS 2	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4
	4' or 5'	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4
6+	Any Width	LTS 3	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4

Adjustment Factors  
 1. Utilized parking for 4' or 5' lanes (+1 LTS)  
 2. PCI below 70 (+1 LTS)  
 \*\*\*Paint Quality Future Consideration



ADAPT LEVELS  
BASED ON USER  
INPUT

ADJUSTMENT  
FACTORS ALLOW  
FLEXIBILITY

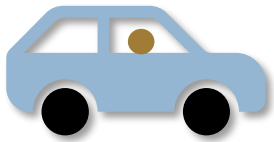
# Ada County Highway District



LIVABLE STREETS PERFORMANCE MEASURES

# A MEASUREMENT FOR ALL

## DRIVERS



### LEVEL OF SERVICE (LOS)

A-C	High Comfort Driving
D	Some Traffic
E	Growing Traffic
F	Large Delays

## BICYCLISTS



### LEVEL OF TRAFFIC STRESS (BLTS)

1	High Comfort for All
2	High Comfort for Adults
3	Increasing Stress for Most
4	Strong and Experienced Bicyclists Only

## PEDESTRIANS



### LEVEL OF TRAFFIC STRESS (PLTS)

1	High Comfort for All
2	High Comfort for Adults
3	Increasing Stress for Most
4	High Stress Experience

 Performance Goal

Performance Measures set goals that are tested in practice. In the built environment, improvement towards the goal is success.



# A MEASUREMENT FOR BICYCLISTS

## MIXED TRAFFIC

# of Auto Lanes	Average Daily Traffic	Posted Speed (Actuals When Available)						
		20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50+ mph
2-Way Street (No Centerline)	0-750	LTS 1	LTS 1	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4
	751-1500	LTS 1	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4
	1501-3000	LTS 2	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4	LTS 4
	3000+	LTS 2	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
1-3 (With Centerline)	0-750	LTS 1	LTS 1	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4
	751-1500	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4
	1501-3000	LTS 2	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
	3000+	LTS 3	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
4-5	0-8000	LTS 3	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
	8000+	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4	LTS 4
6+	Any ADT	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4	LTS 4	LTS 4

Used in situations where there is no dedicated bike facility, or the dedicated facility is frequently blocked forcing the bicyclist to take the lane.

### Adjustment Factors

- Traffic calming features in place on roads with 3 or less lanes – Lower 1 LTS

# A MEASUREMENT FOR BICYCLISTS

Elmer from Pierce Park





# A MEASUREMENT FOR BICYCLISTS



# A MEASUREMENT FOR BICYCLISTS

## MIXED TRAFFIC

ELMER

NORTHVIEW

# of Auto Lanes	Average Daily Traffic	Posted Speed (Actuals When Available)						
		20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50+ mph
2-Way Street (No Centerline)	0-750	LTS 1	LTS 1	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4
	751-1500	LTS 1	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4
	1501-3000	LTS 2	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4	LTS 4
	3000+	LTS 2	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
1-3 (With Centerline)	0-750	LTS 1	LTS 1	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4
	751-1500	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4
	1501-3000	LTS 2	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
	3000+	LTS 3	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
4-5	0-8000	LTS 3	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
	8000+	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4	LTS 4
6+	Any ADT	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4	LTS 4	LTS 4

Used in situations where there is no dedicated bike facility, or the dedicated facility is frequently blocked forcing the bicyclist to take the lane.

### Adjustment Factors

- Traffic calming features in place on roads with 3 or less lanes – Lower 1 LTS



# A MEASUREMENT FOR BICYCLISTS

## BIKE LANES & BUFFERED BIKE LANES

Used in situations where there is a dedicated bike lane with or without a painted buffer. Bike lane width is measured exclusive of the gutter pan.

# of Auto Lanes	Bike Lane Width (Includes Buffer)	Posted Speed (Actuals When Available)						
		20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50+ mph
2 -3	6'+	LTS 1	LTS 1	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4
	4' or 5'	LTS 2	LTS 2	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4
4-5	6'+	LTS 2	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4
	4' or 5'	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4
6+	Any Width	LTS 3	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4

### Adjustment Factors

- Heavily Utilized Parking Adjacent to a 4' or 5' Bike Lane – Add 1 LTS
- Roadway Pavement Condition Index Rating Below 70 – Add 1 LTS
- Frequent Commercial Driveway Crossings – Add 1 LTS

# A MEASUREMENT FOR BICYCLISTS

Gary Lane, headed North from State





# A MEASUREMENT FOR BICYCLISTS



Linder and McMillan



# A MEASUREMENT FOR BICYCLISTS



Fairview and 25th



## RAISED/PROTECTED LANES AND MULTI-USE PATHS

Used in situations where there are protected bike lanes or multi-use paths. For all segments (between intersections), these would be considered LTS 1.

### **Adjustment Factors**

- Raised Bike Lanes At >35 MPH – Add 1 LTS
- Frequent Commercial Driveways – Add 1 LTS
- Bike lanes using only candles – Add 1 LTS

# A MEASUREMENT FOR BICYCLISTS



Main Street and Boise River  
Two-Way Cycle Track



# A MEASUREMENT FOR BICYCLISTS



St. Luke's Cycle Track



# A MEASUREMENT FOR BICYCLISTS



Federal Way Pathway



# A MEASUREMENT FOR BICYCLISTS

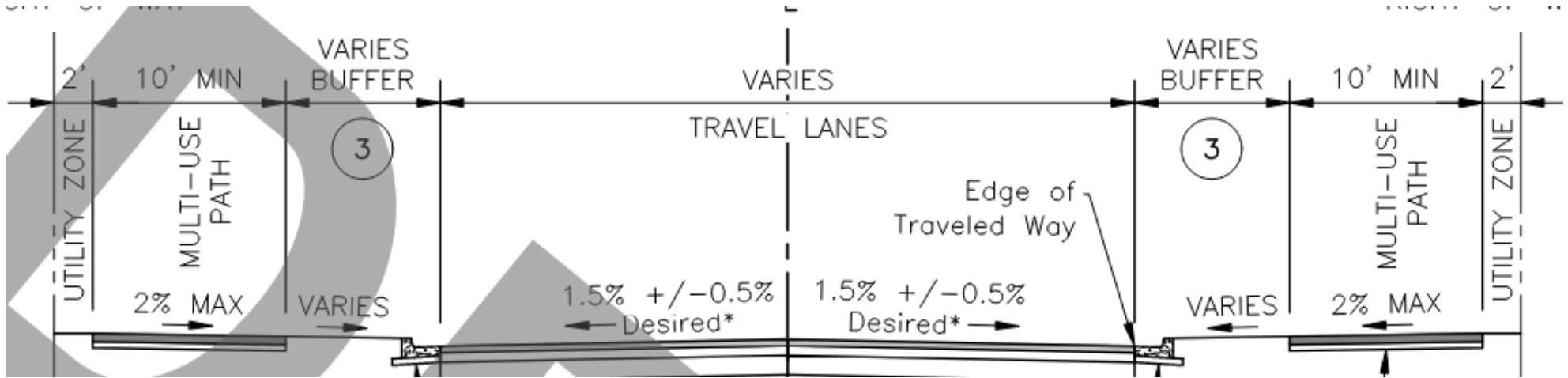




# A MEASUREMENT FOR BICYCLISTS

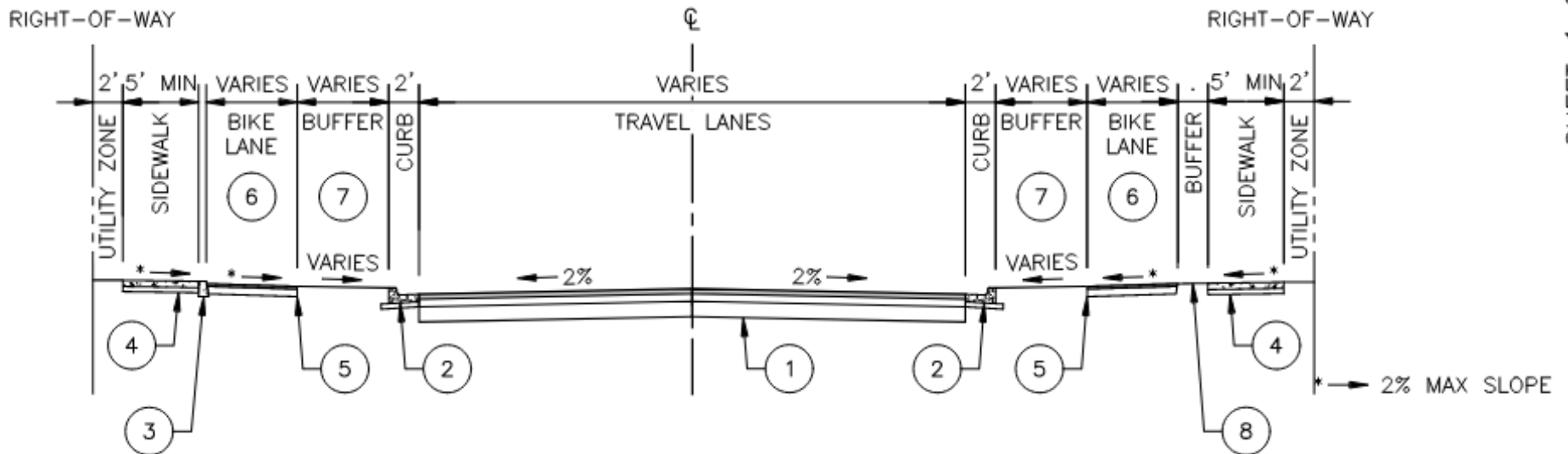


# A MEASUREMENT FOR BICYCLISTS



## CURB SEPARATED RAISED BIKE LANE

## BUFFER SEPARATED RAISED BIKE LANE



# A MEASUREMENT FOR BICYCLISTS

## UNSIGNALIZED INTERSECTIONS

Used in situations where there is no signal. To rank, the highest stress score of any leg would be utilized.

Posted Speed	Total Auto Lanes Crossed		
	1-3 Lanes	4-5 Lanes	6+ Lanes
20-25	LTS 1	LTS 2	LTS 4
30	LTS 1	LTS 2	LTS 4
35	LTS 3	LTS 3	LTS 4
40+	LTS 3	LTS 4	LTS 4

### Adjustment Factors

- Adding a Rectangular Rapid Flashing Beacon (RRFB) – Lower 1 LTS
- Refuge medians of at least 8' with a vertical element would reduce the total number of lanes crossed at one time to the distance from curb to median.
- Intersections with a Bike Lane and Right Turn Lane – Add 1 LTS



# A MEASUREMENT FOR BICYCLISTS



Posted Speed	Total Auto Lanes Crossed		
	1-3 Lanes	4-5 Lanes	6+ Lanes
20-25	LTS 1	LTS 2	LTS 4
30	LTS 1	LTS 2	LTS 4
35	LTS 3	LTS 3	LTS 4
40+	LTS 3	LTS 4	LTS 4

# A MEASUREMENT FOR BICYCLISTS



St Luke's Raised Crosswalk



# A MEASUREMENT FOR BICYCLISTS

## SIGNALIZED INTERSECTIONS AND ENHANCED CROSSINGS

Used in situations where there is a signal present. To rank, the highest stress score of any leg would be utilized.

Intersection Features	Total Auto Lanes Crossed At One Time		
	1-3	4-5	6+
Enhanced Crossing w/ Median Refuge	LTS 1	N/A	N/A
Protected Intersection or Enhanced Crossing (No Refuge)	LTS 1	LTS 2	LTS 3
Floating Bike Lane (Left of RTL)	LTS 2	LTS 3	LTS 4
Bike Lane (Right of RTL or Thru-Right Lane)	LTS 3	LTS 4	LTS 4

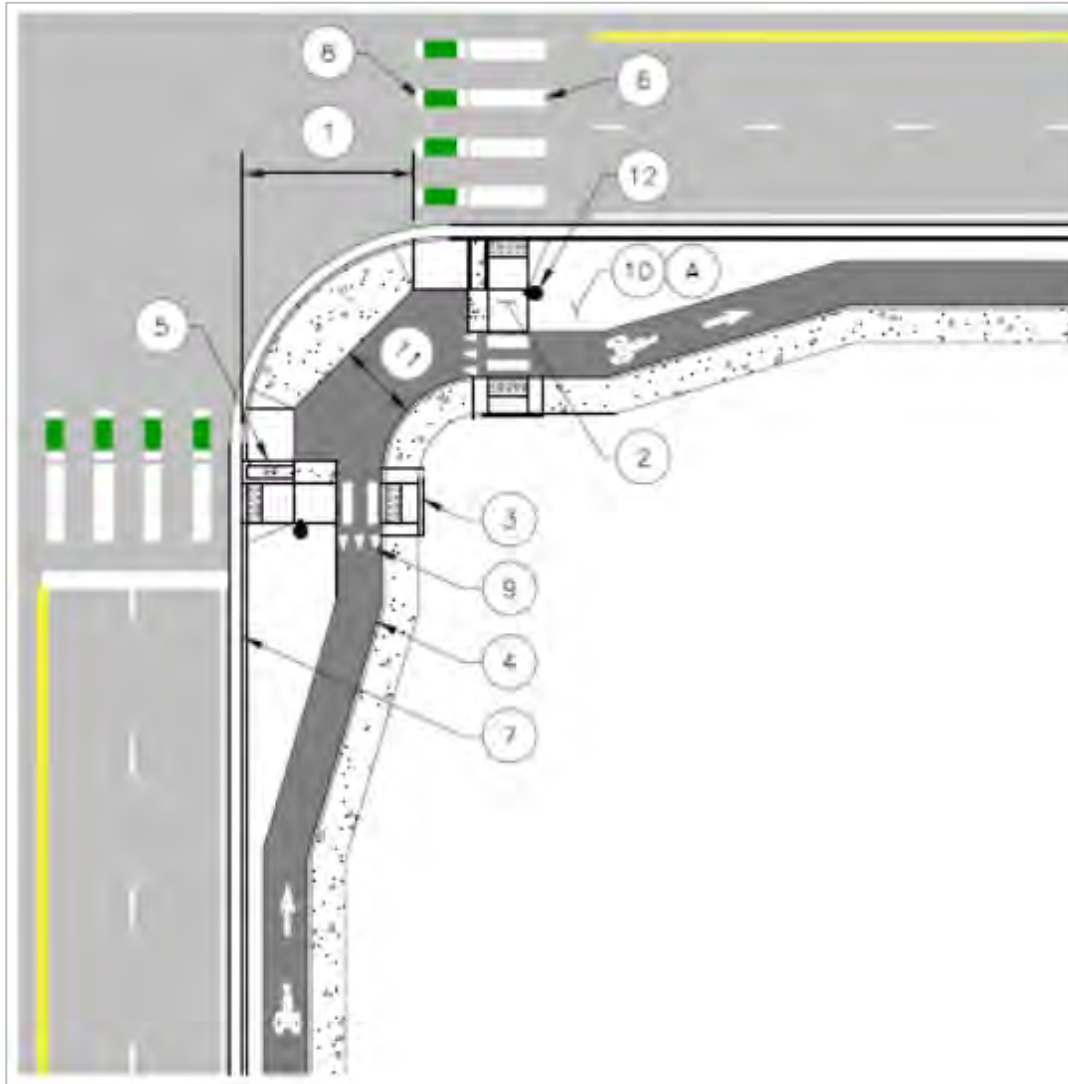
### Adjustment Factors

- Refuge medians of at least 8' with a vertical element would reduce the total number of lanes crossed at one time to the distance from curb to median.





# A MEASUREMENT FOR BICYCLISTS



# A MEASUREMENT FOR PEDESTRIANS

## SIDEWALK PRESENCE

Sidewalk Presence	# of Travel Lanes	Posted Speed (Actuals When Available)				
		20 mph	25 mph	30 mph	35 mph	40+ mph
Complete Both Sides	2 Lanes	LTS 1	LTS 1	LTS 1	LTS 1	LTS 2
	3+ Lanes	LTS 1	LTS 1	LTS 1	LTS 1	LTS 2
Complete 1 Side	2 Lanes	LTS 2	LTS 2	LTS 2	LTS 2	LTS 3
	3+ Lanes	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4
Incomplete Both Sides	2 Lanes	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4
	3+ Lanes	LTS 2	LTS 2	LTS 4	LTS 4	LTS 4

### Adjustment Factors

- Frequent Commercial Driveways – Add 1 LTS
- Low volume residential streets 25 MPH or lower – Lower 1 LTS

## SIDEWALK BUFFER

Total Travel Lanes	Total Buffer Width (Includes Landscaping, Parking, Bike Lanes, etc)			
	<5'	5'-10'	11'-14'	15'+
1-2	LTS 2	LTS 2	LTS 1	LTS 1
3	LTS 3	LTS 2	LTS 1	LTS 1
4-5	LTS 4	LTS 3	LTS 2	LTS 1
6+	LTS 4	LTS 4	LTS 3	LTS 2

### Adjustment Factors

- Low volume residential streets with 1-2 lanes – Lower 1 LTS
- Buffers for multi-use paths to be measured at centerline of the pathway.
- Buffers with street trees – Lower 1 LTS

## SIDEWALK WIDTH AND CONDITION

Actual Sidewalk Width	Sidewalk Condition			
	Very Good	Good	Fair	Poor
<4'	LTS 4	LTS 4	LTS 4	LTS 4
4'	LTS 3	LTS 3	LTS 3	LTS 4
5'	LTS 2	LTS 2	LTS 2	LTS 4
6'+	LTS 1	LTS 1	LTS 2	LTS 3

### Adjustment Factors

- Low volume residential streets with 4'-5' sidewalk – Lower 1 LTS
- 5' detached sidewalk in very good or good condition – Lower 1 LTS

# A MEASUREMENT FOR PEDESTRIANS

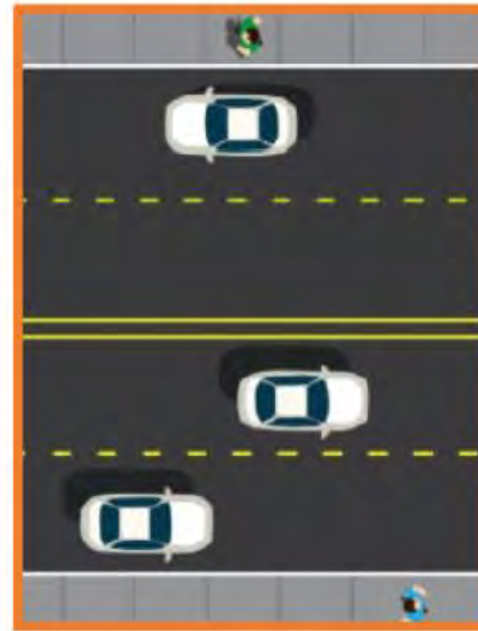
PLTS 1



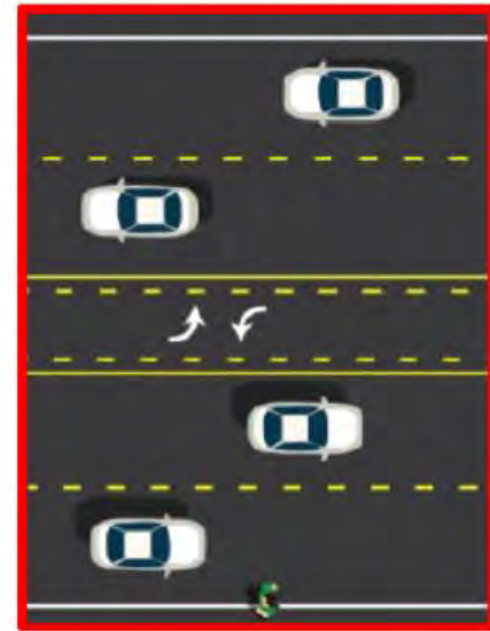
PLTS 2



PLTS 3



PLTS 4





## UNSIGNALIZED CROSSINGS

Speed Limit	Total Auto Lanes Crossed At One Time		
	1-3 Lanes	4-5 Lanes	6+ Lanes
20-25	LTS 1	LTS 2	LTS 4
30	LTS 1	LTS 2	LTS 4
35	LTS 2	LTS 3	LTS 4
40+	LTS 3	LTS 4	LTS 4

### Adjustment Factors

- No illumination present- Add 1 LTS
- Ramps Inaccessible per Inventory – Add 1 LTS
- Add a Rectangular Rapid Flashing Beacon (Median required when over 3 lanes) - Lower 1 LTS
- Pedestrian refuge medians of at least 8' with a vertical element would reduce the total number of lanes crossed at one time to the distance from curb to median.



# A MEASUREMENT FOR PEDESTRIANS





# A MEASUREMENT FOR PEDESTRIANS





# A MEASUREMENT FOR PEDESTRIANS

## ROUNDABOUTS

Lanes Crossed	LTS w/o Enhanced Crossing	LTS w/ Enhanced Crossing
1	LTS 2	LTS 1
2+	LTS 2	LTS 1

### Adjustment Factors

- Slip lane present – Add 1 LTS

# A MEASUREMENT FOR PEDESTRIANS



# A MEASUREMENT FOR PEDESTRIANS

## SIGNALIZED INTERSECTIONS AND CROSSINGS

Intersection Features	Total Auto Lanes Crossed At One Time			
	1-3	4-5	6-7	8+
PHB or Ped Signal	LTS 1	LTS 2	LTS 4	LTS 4
Signalized Intersection	LTS 1	LTS 2	LTS 3	LTS 4

### Adjustment Factors

- Ramps and Pushbuttons Inaccessible per Inventory – Add 1 LTS
- No Illumination Present – Add 1 LTS
- Add Leading Pedestrian Interval – Lower 1 LTS
- Pedestrian refuge medians of at least 8' with a vertical element would reduce the total number of lanes crossed at one time to the distance from curb to median.
- Frequency of signalized crossing opportunities should be considered during project design.

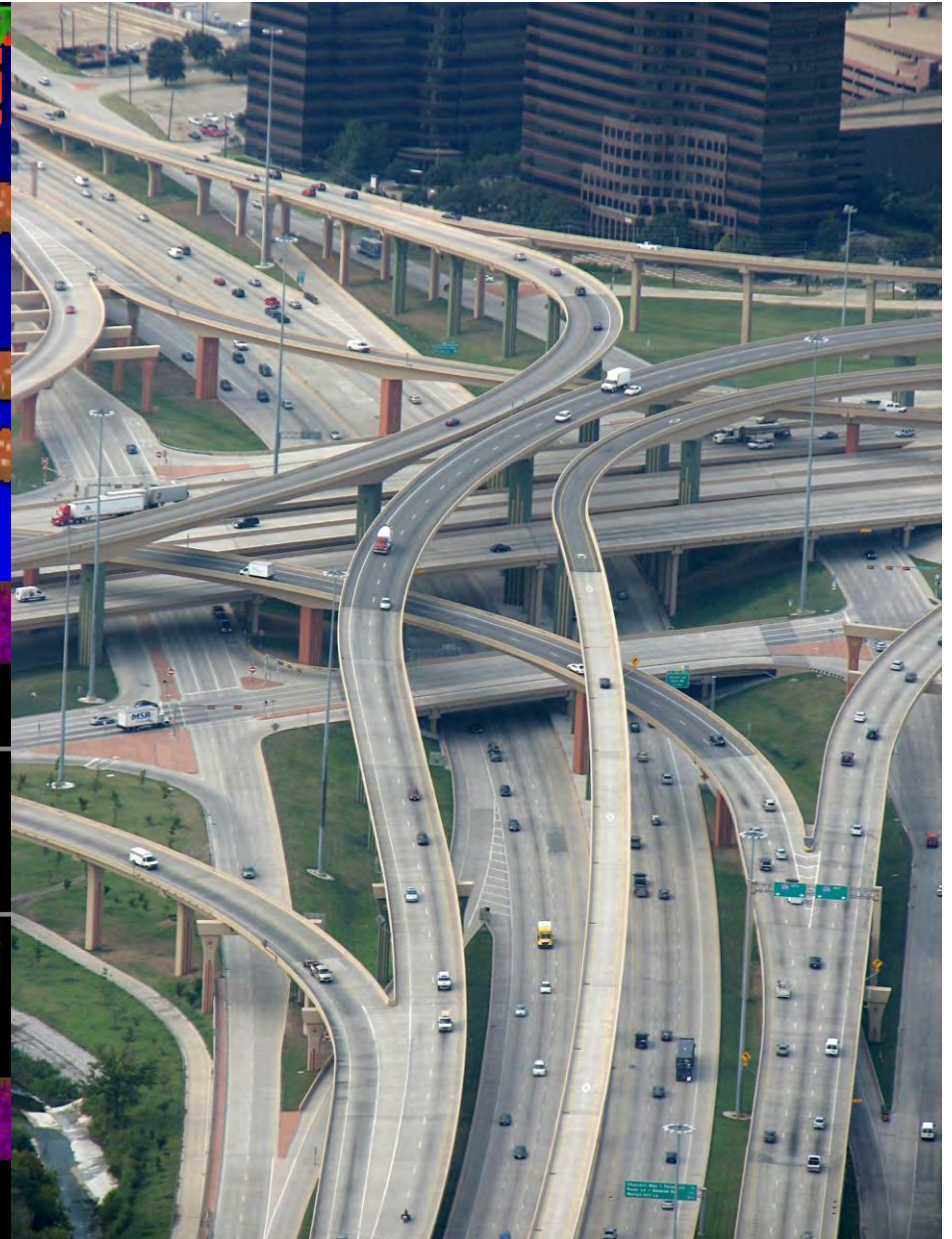


# A MEASUREMENT FOR PEDESTRIANS





# A MEASUREMENT FOR PEDESTRIANS





# A MEASUREMENT FOR PEDESTRIANS





# A MEASUREMENT FOR PEDESTRIANS



# IMPLEMENTATION STRATEGY

Moving the **LIVABLE STREETS PERFORMANCE MEASURES** from idea into everyday practice is a key part of the success of this effort. Many activities are already underway. The list here is a summary of current and proposed actions being taken to fully embrace the measures set forth in this document. The identified responsible department and timeline is a guide to encourage ongoing effort to implement these measures.

In all things, ACHD is committed to its Complete Streets policy and seeking to meet the desired performance levels identified here.



## ONGOING EFFORTS

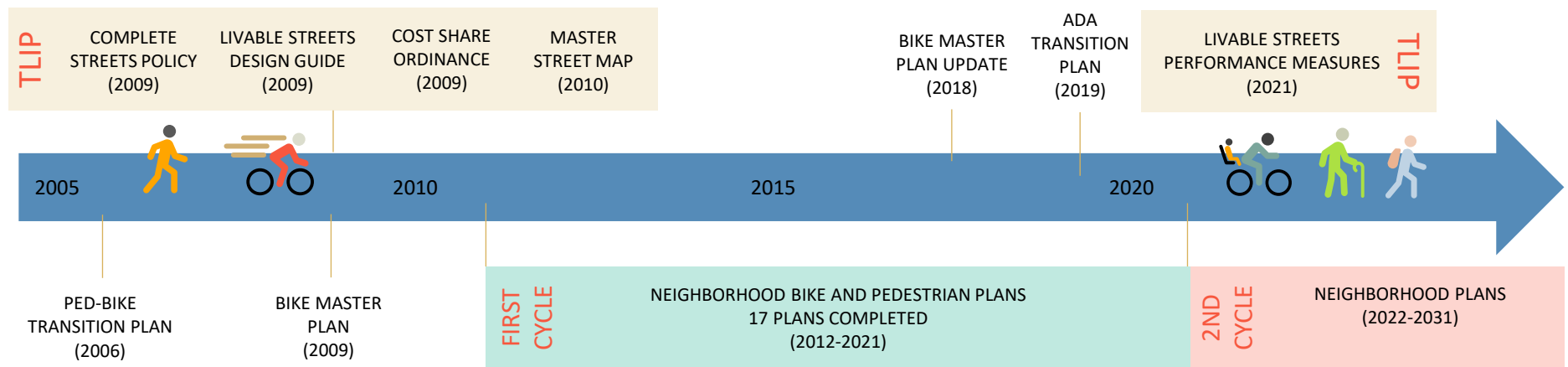
EFFORT DESCRIPTION	RESPONSIBLE DEPARTMENT
Expand the scope of roadway maintenance projects to include a comprehensive improvement for all users.	Planning
Establish multi-use paths and raised or protected bike lanes as the standard bike facility treatment on arterial roadways.	Planning
Select and acquire sweeper equipment for use in protected bike lanes.	Maintenance
Development typical drawings reflecting best practices for raised bike lanes and multi-use paths (including at driveways and intersections).	Design
Establish an interim policy for the construction of temporary multi-use paths along arterial roadways with development.	Development Services
<b>Hire a Bicyclist and Pedestrian Program Coordinator to facilitate implementation.</b>	Planning

## NEW EFFORTS

EFFORT DESCRIPTION	RESPONSIBLE DEPARTMENT	TIMELINE
Hold training for all project team members on new metrics.	Planning	Summer 2021
Develop projects that meet desired performance levels during project scoping. Document if not able to meet.	Planning	Summer 2021
Review current design efforts to determine if projects will meet desired LTS upon construction. Revise as feasible.	Capital Projects	Summer 2021
Establish comprehensive project prioritization process to be used across all categories and modes for the IFYWP.	Planning	Fall 2021
<b>Review Sections 7100 and 7200 for modifications to bring development review in alignment with new measures.</b>	Development Services	Winter 2022
Review and adjust other ACHD policies as identified that support implementing Livable Streets.	All	Ongoing

# IMPLEMENTATION CONSIDERATIONS

- Transition Period
- Evolving Practice for Active Transportation



- Partnership Is Key



What ACHD Can Do Alone

What ACHD Can Do With Partnership





**QUESTIONS?**