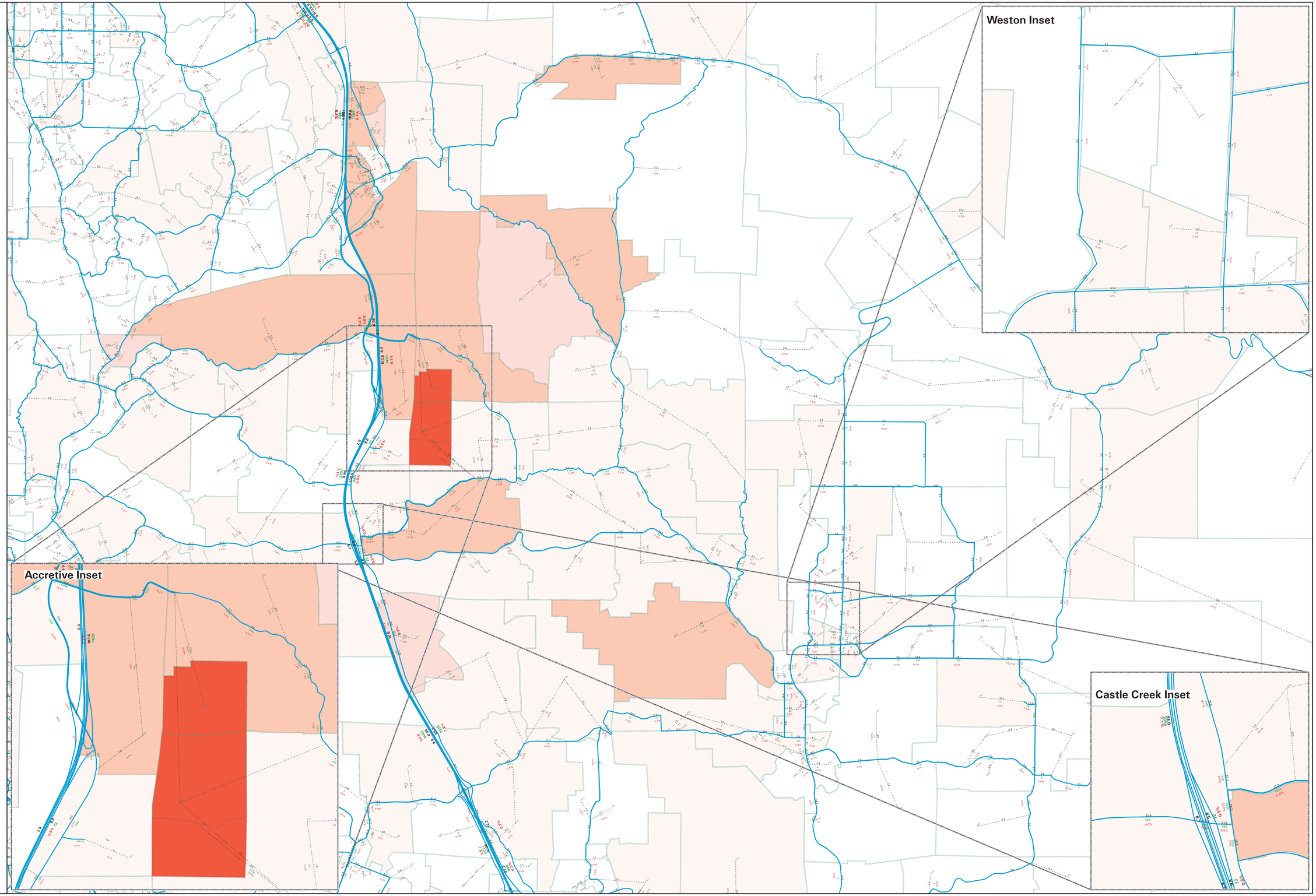


SANDAG Series 12
2050 Highway Network
Select Zone Assignment

VALLEY CENTER Area

Model Run 07/23/12
2050RC11F
With 3P Update
With Road 3C
With Accretive Proposal
2050 - 2011 RTP
Revenue Constrained

Forecasted Volumes:

- Unadjusted Forecast Volume (in Thousands)
- Whole Select Link Volume
- Select Link Percentage
- Traffic Analysis Zone

Link Distributions:

- 100%
- 50.1% --> 99.9%
- 25.1% --> 50.0%
- 10.1% --> 25.0%
- 5.1% --> 10.0%
- 0.1% --> 5.0%
- 0%

Zonal Distributions:

- 100%
- 25.1% --> 99.9%
- 10.1% --> 25.0%
- 1.1% --> 10.0%
- 0.6% --> 1.0%
- 0.1% --> 0.5%
- Zero Trips (0.0%)

Feet 0 500 1,000
Meters 0 150 300

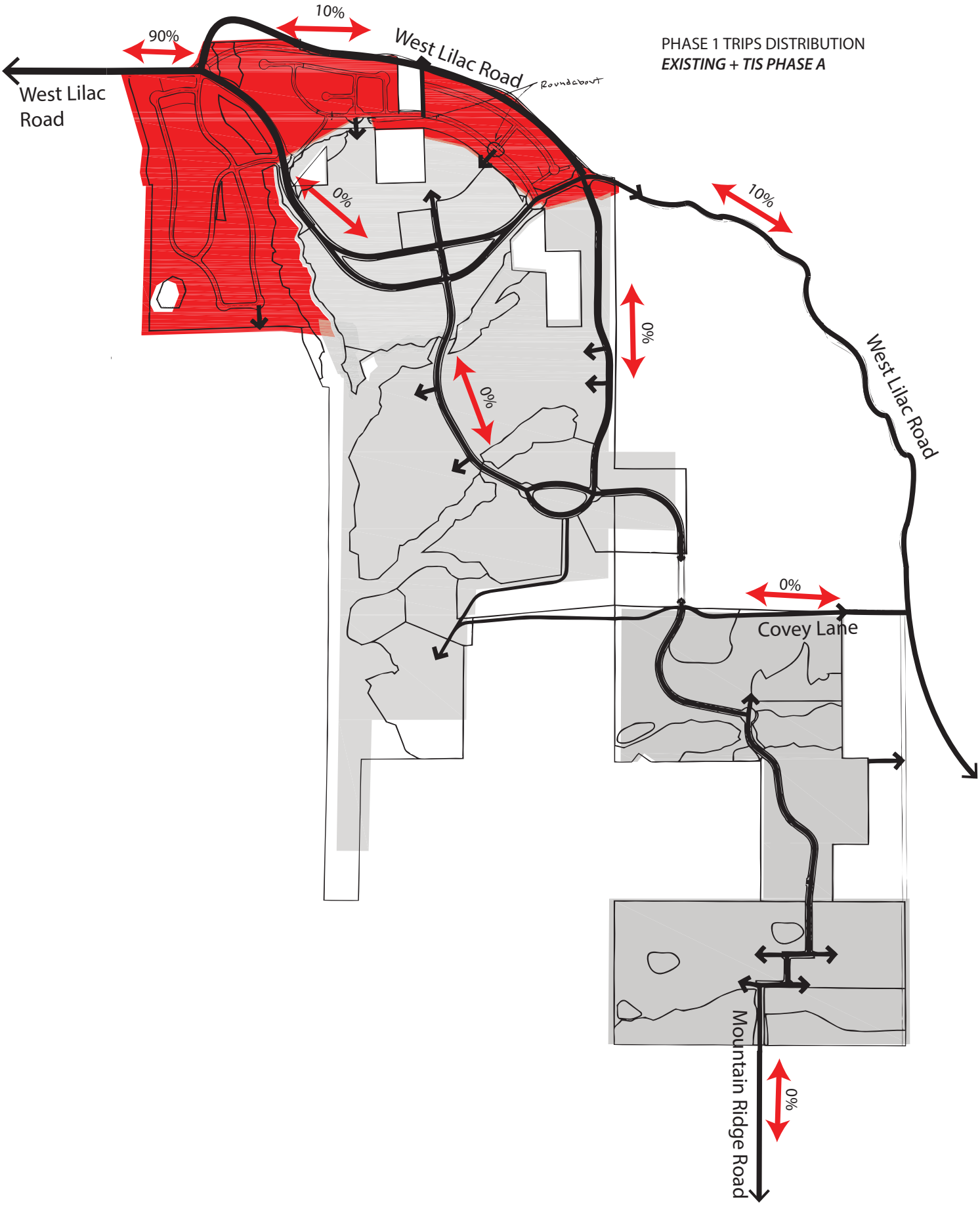
SANDAG
San Diego's Regional Planning Agency

July 25, 2012

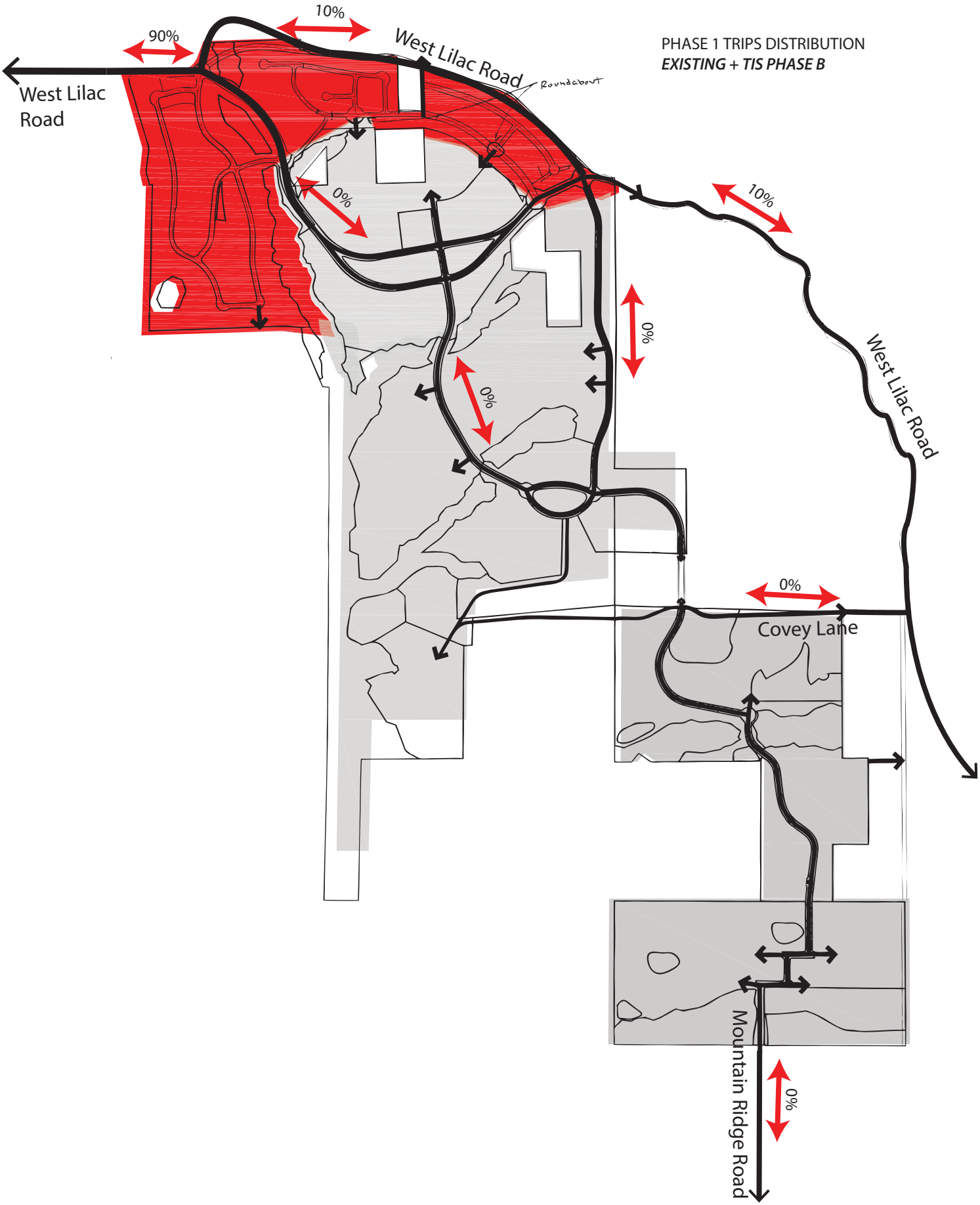
Appendix L

Project Trip Distribution Along Frontage and Access Roads by Phase

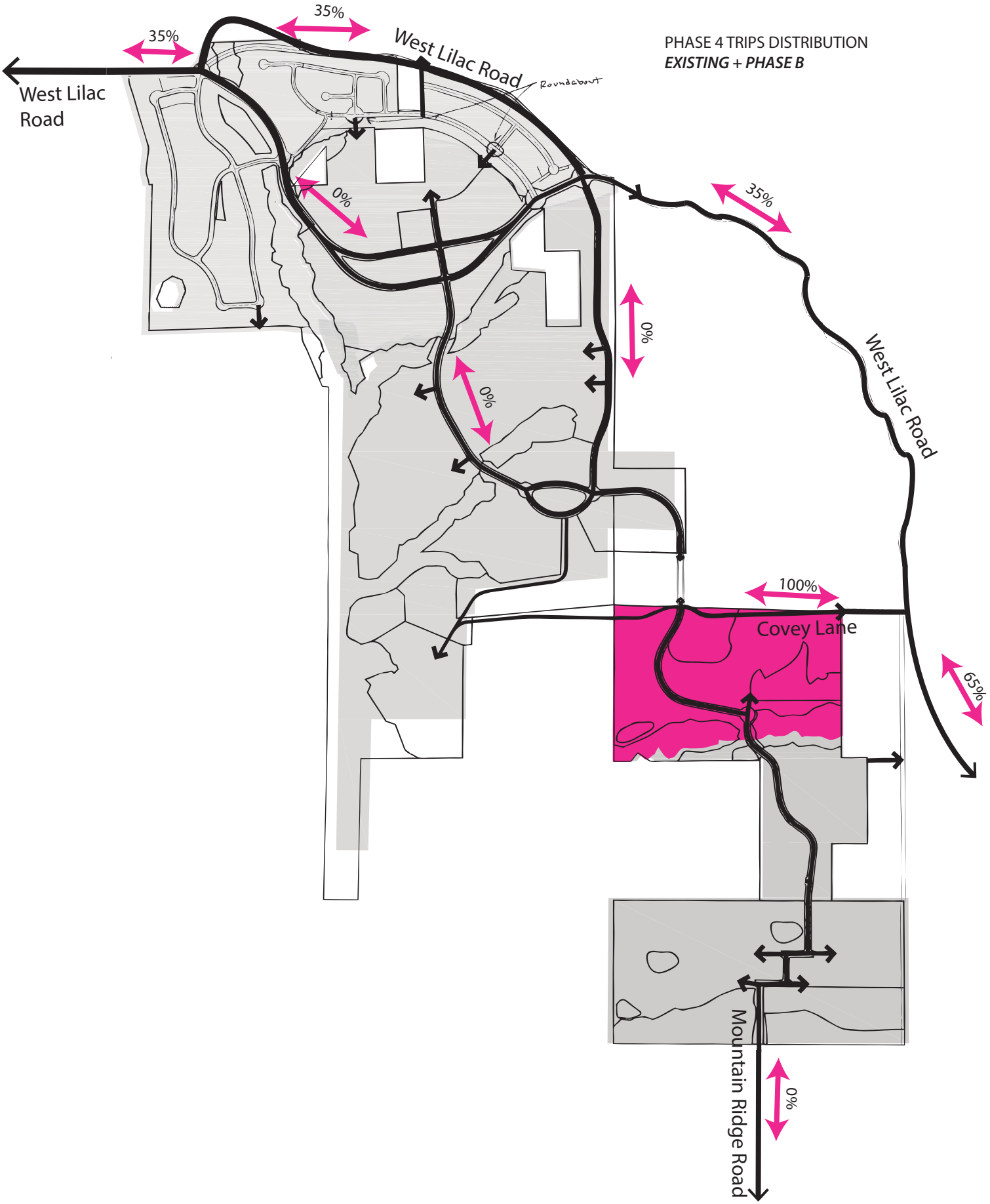
PHASE 1 TRIPS DISTRIBUTION
EXISTING + TIS PHASE A



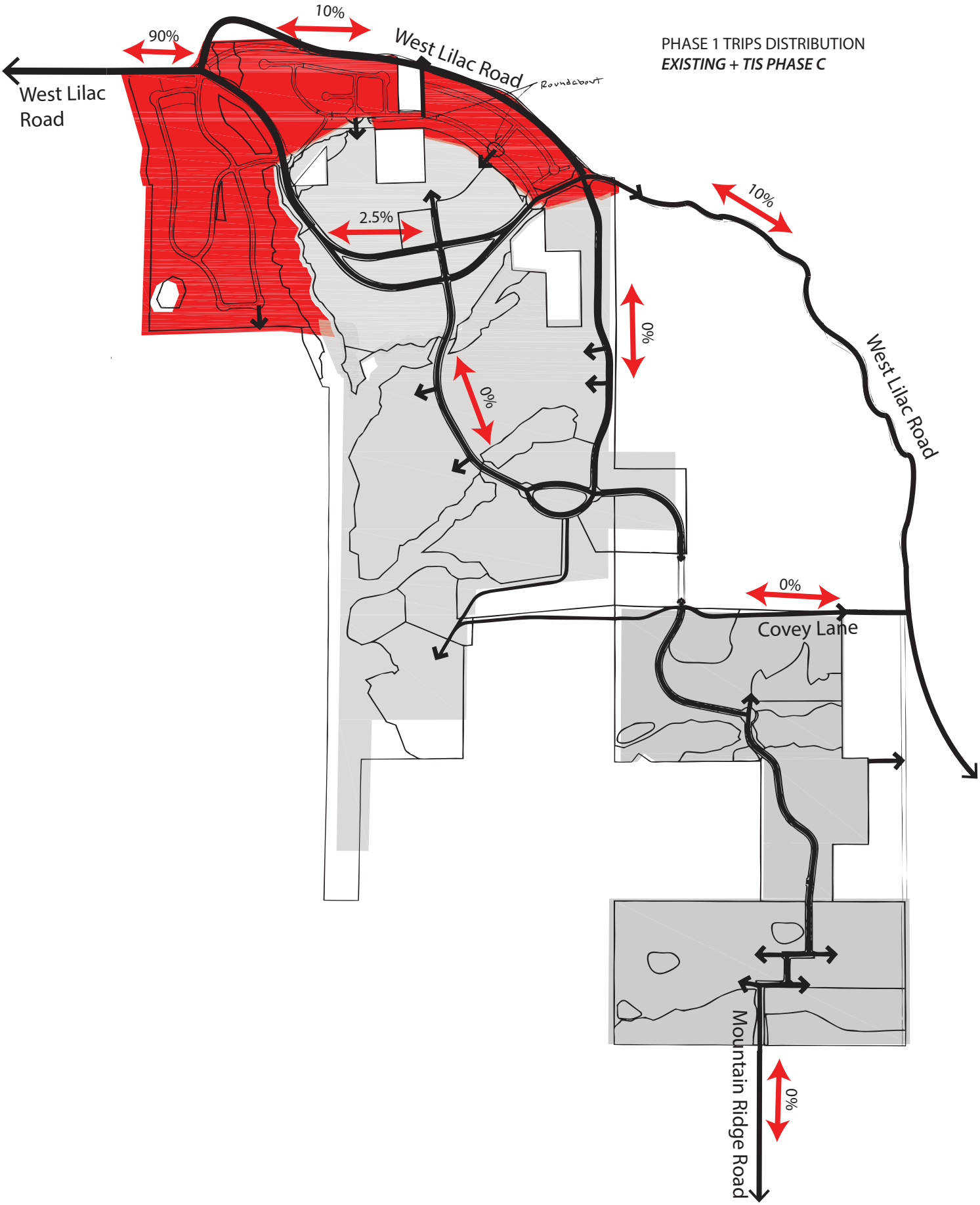
PHASE 1 TRIPS DISTRIBUTION
EXISTING + TIS PHASE B

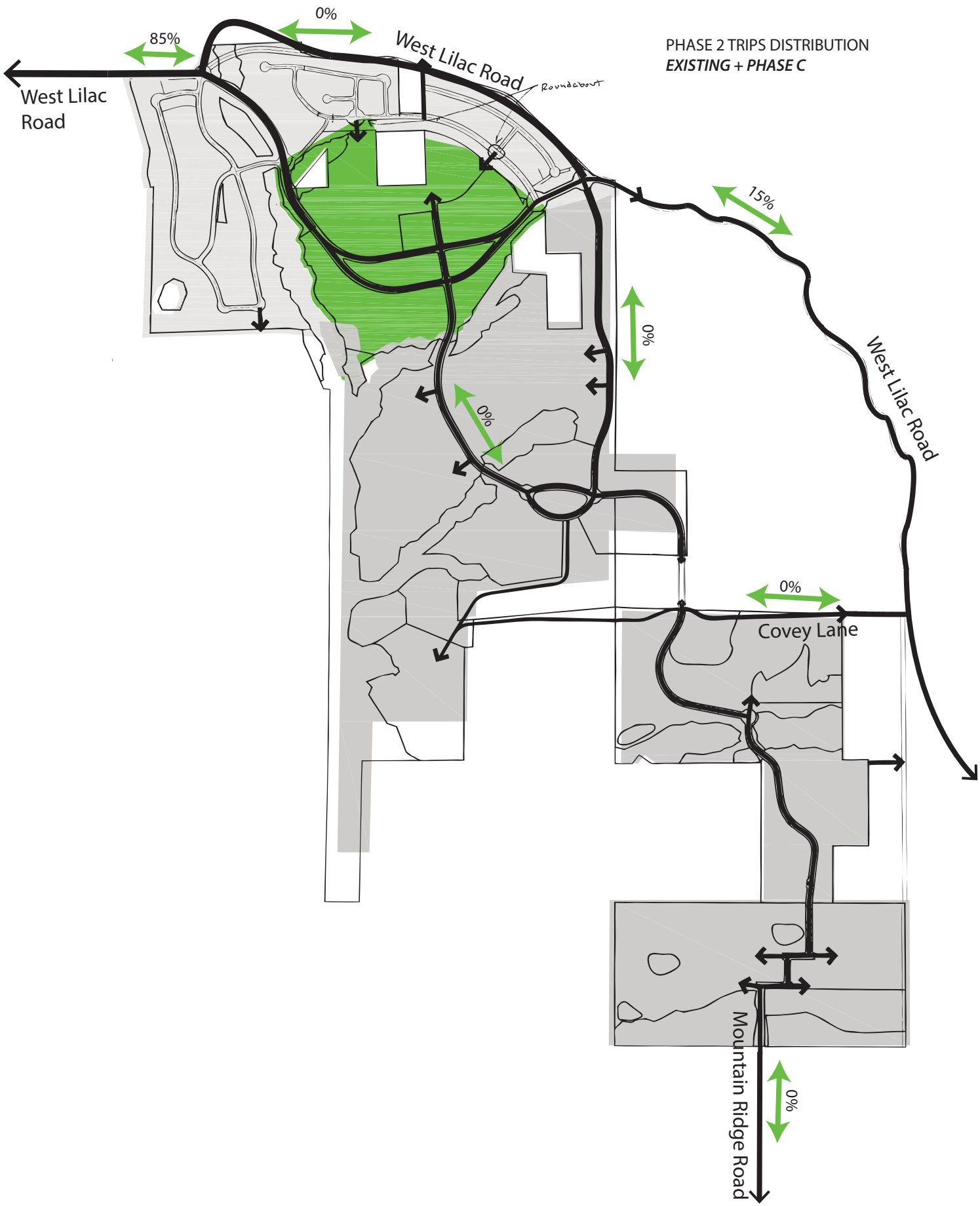


PHASE 4 TRIPS DISTRIBUTION
EXISTING + PHASE B

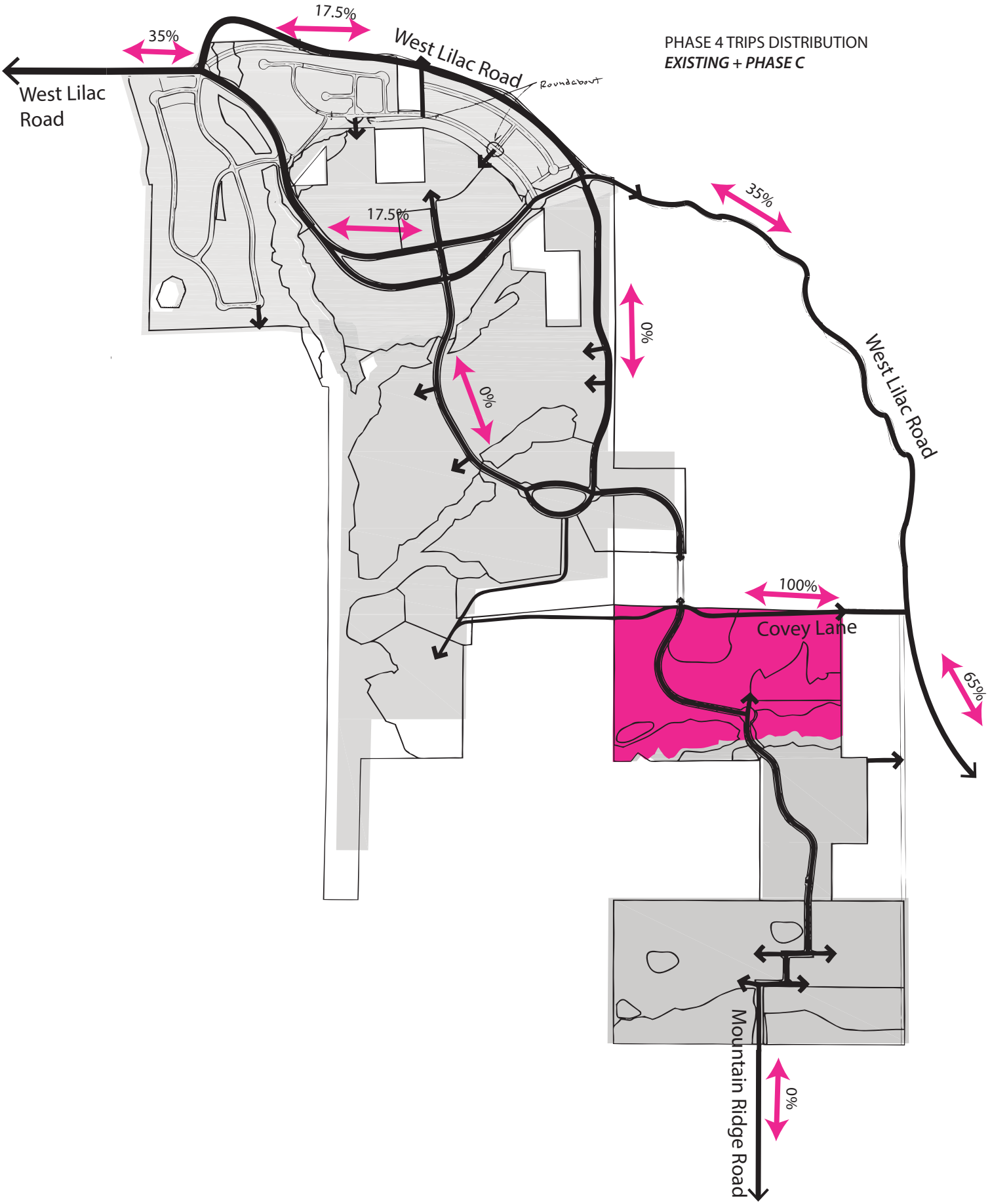


PHASE 1 TRIPS DISTRIBUTION
EXISTING + TIS PHASE C

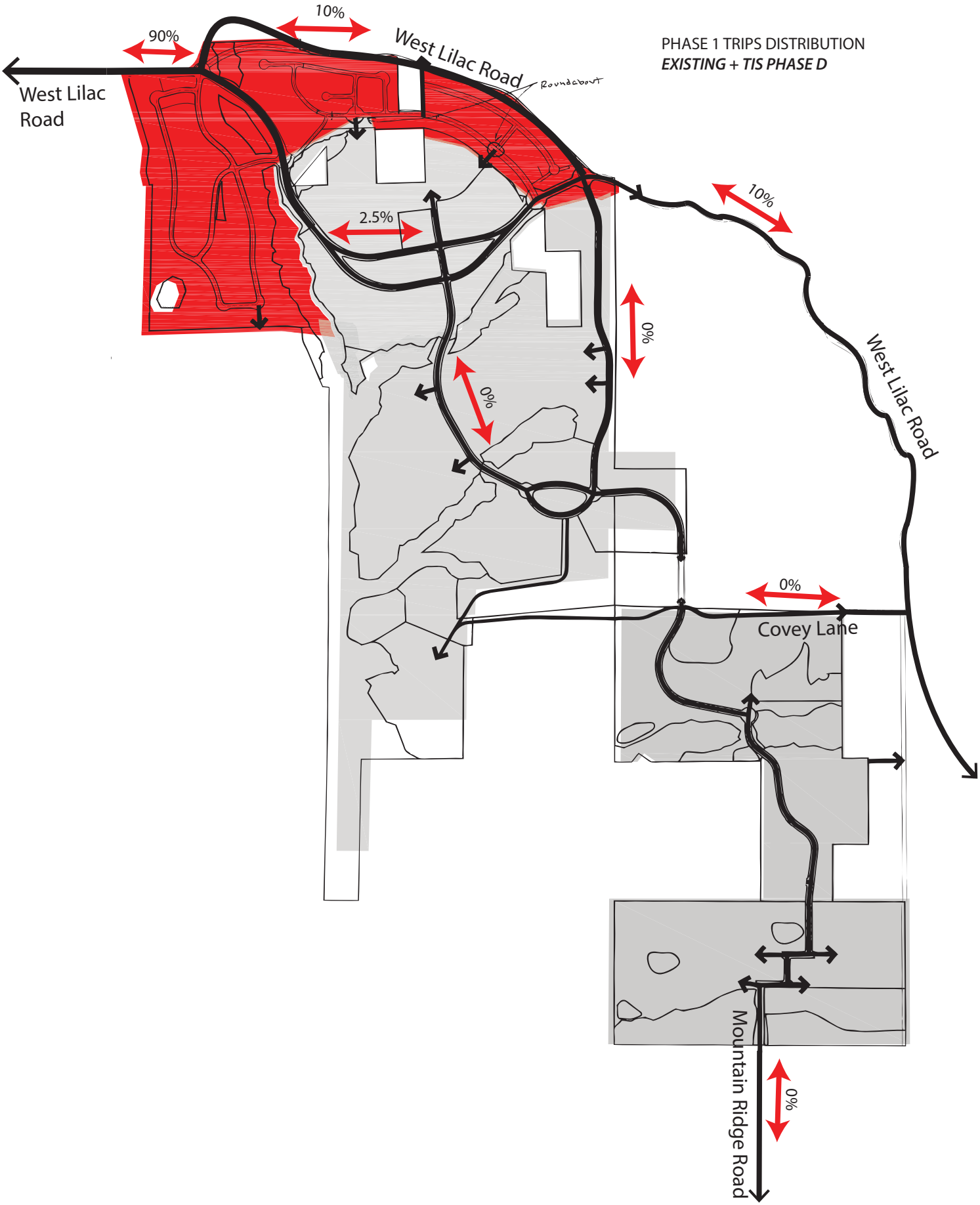



PHASE 2 TRIPS DISTRIBUTION
EXISTING + PHASE C
West Lilac Road
Roundabout
West Lilac Road
85%
0%
15%
0%
0%
West Lilac Road
0%
Covey Lane
Mountain Ridge Road
0%

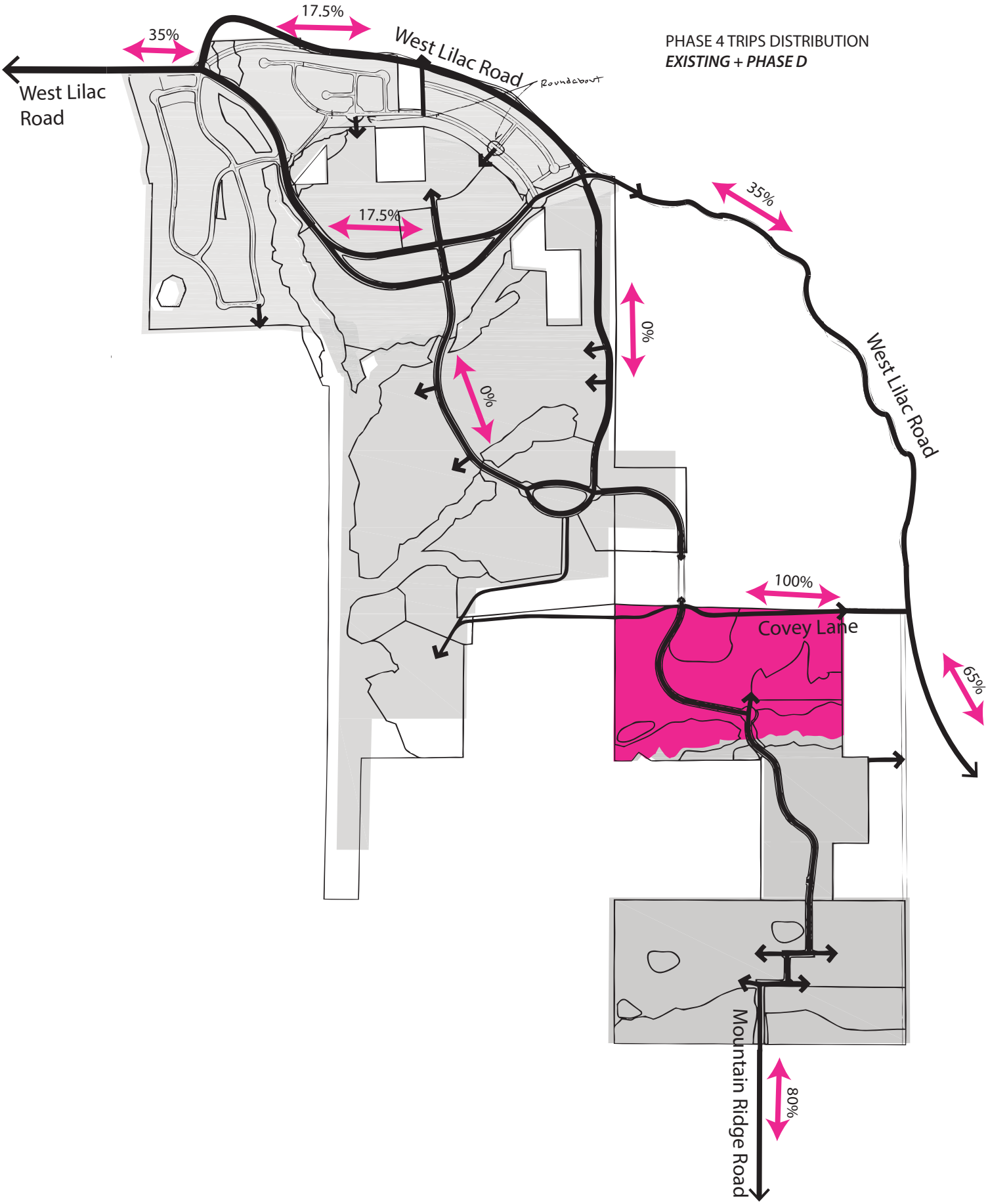
PHASE 4 TRIPS DISTRIBUTION
EXISTING + PHASE C

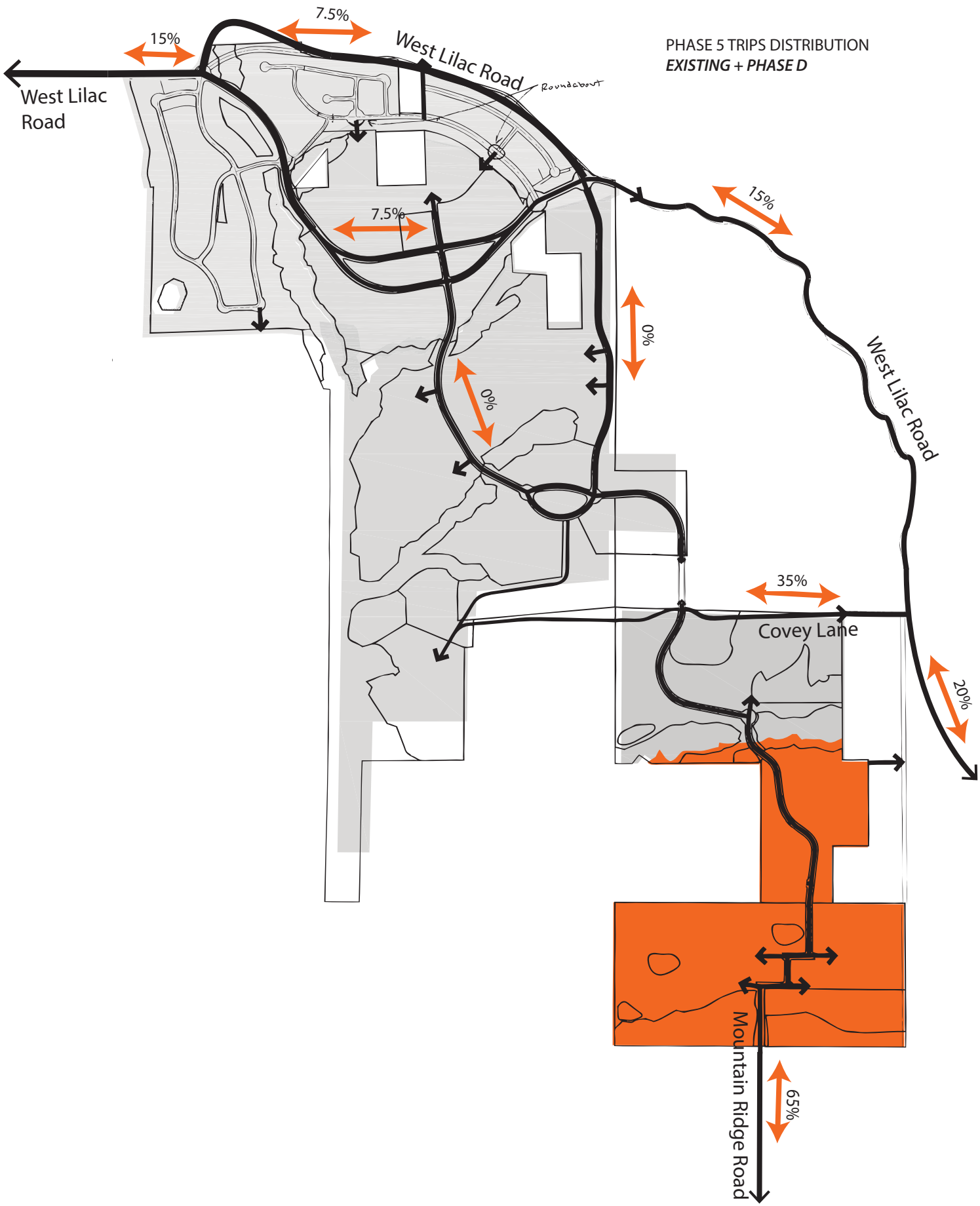


PHASE 1 TRIPS DISTRIBUTION
EXISTING + TIS PHASE D

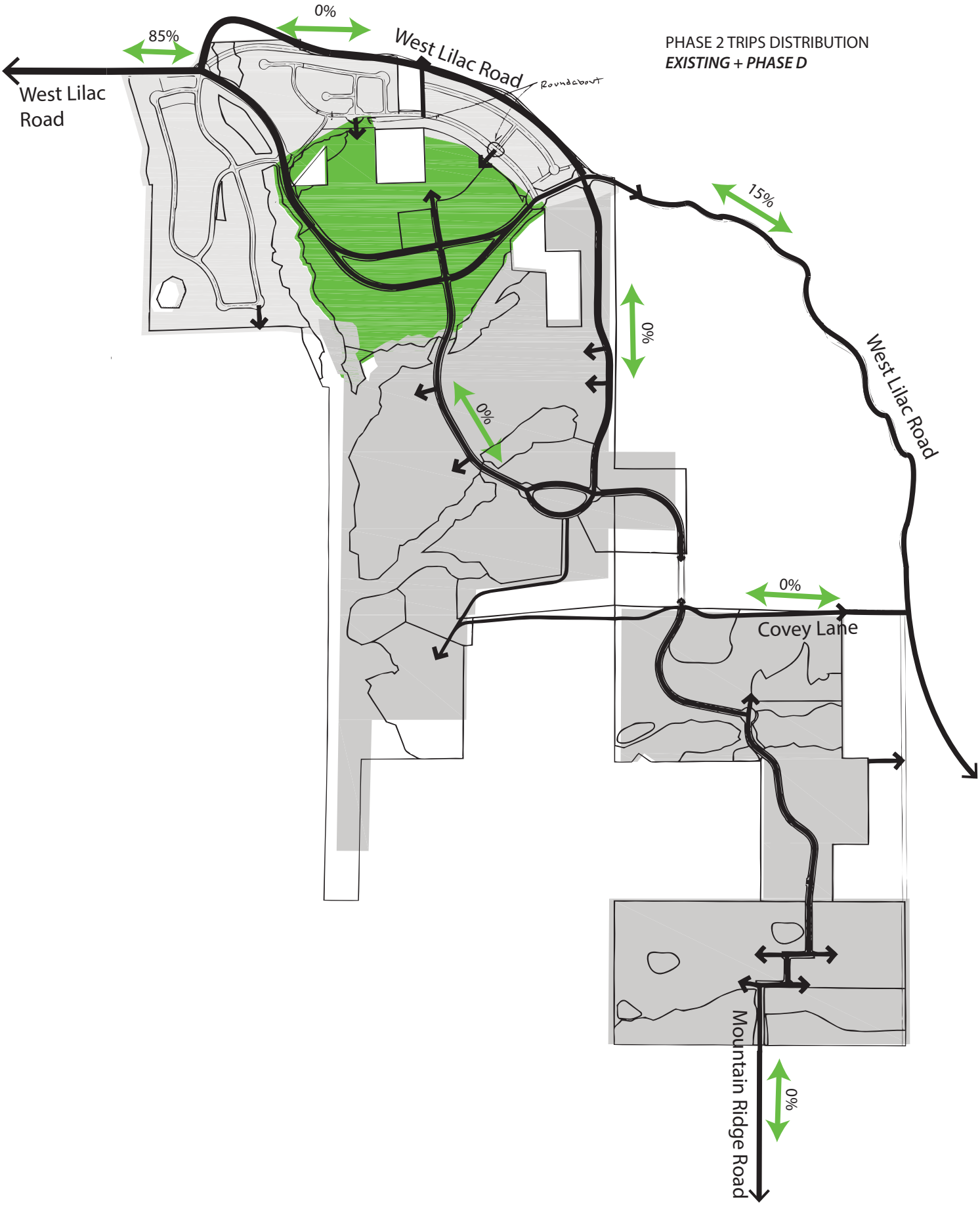


PHASE 4 TRIPS DISTRIBUTION
EXISTING + PHASE D

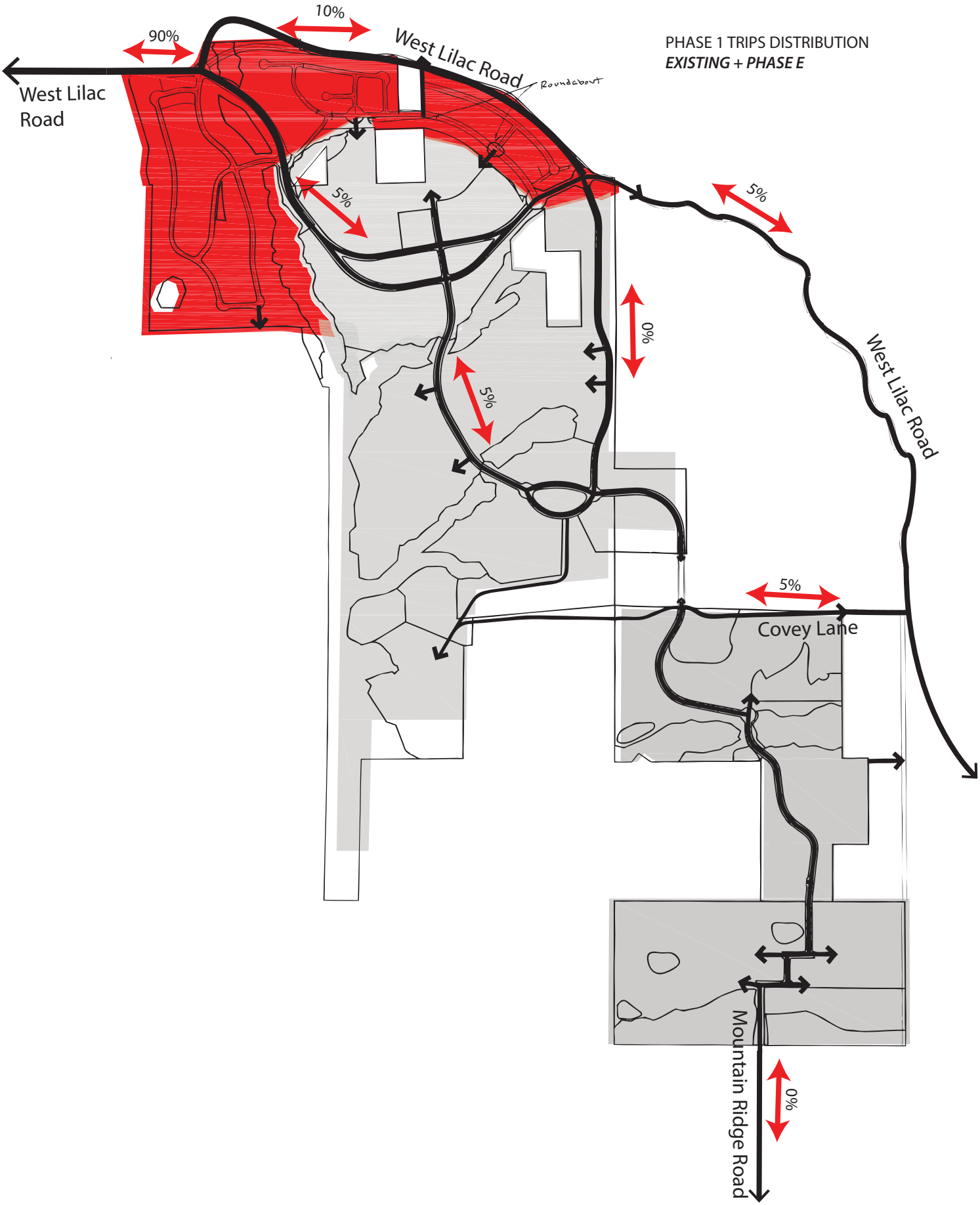



PHASE 5 TRIPS DISTRIBUTION
EXISTING + PHASE D
West Lilac Road
West Lilac Road
Roundabout
15%
7.5%
7.5%
15%
0%
0%
35%
20%
65%
West Lilac Road
Covey Lane
Mountain Ridge Road

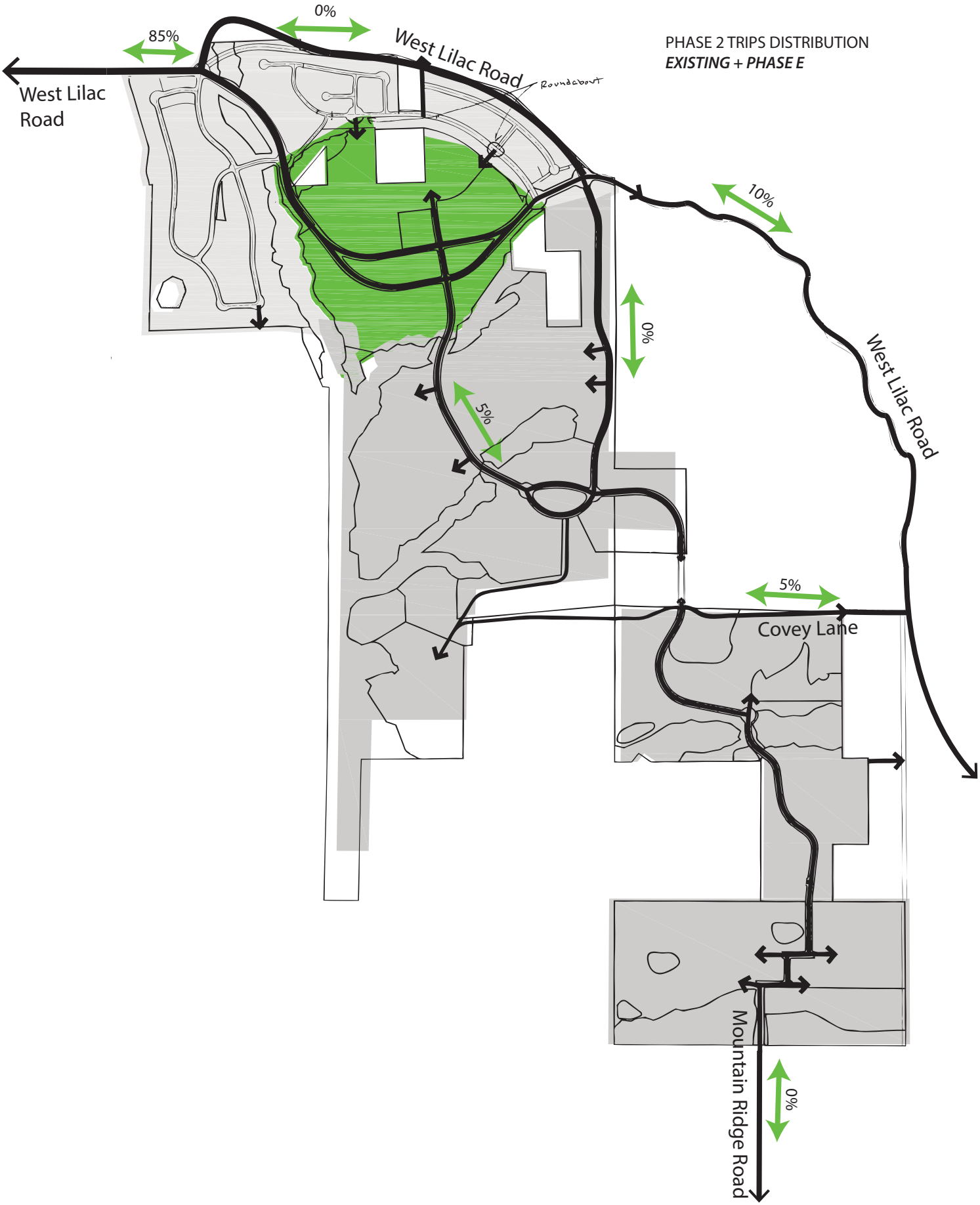
PHASE 2 TRIPS DISTRIBUTION
EXISTING + PHASE D



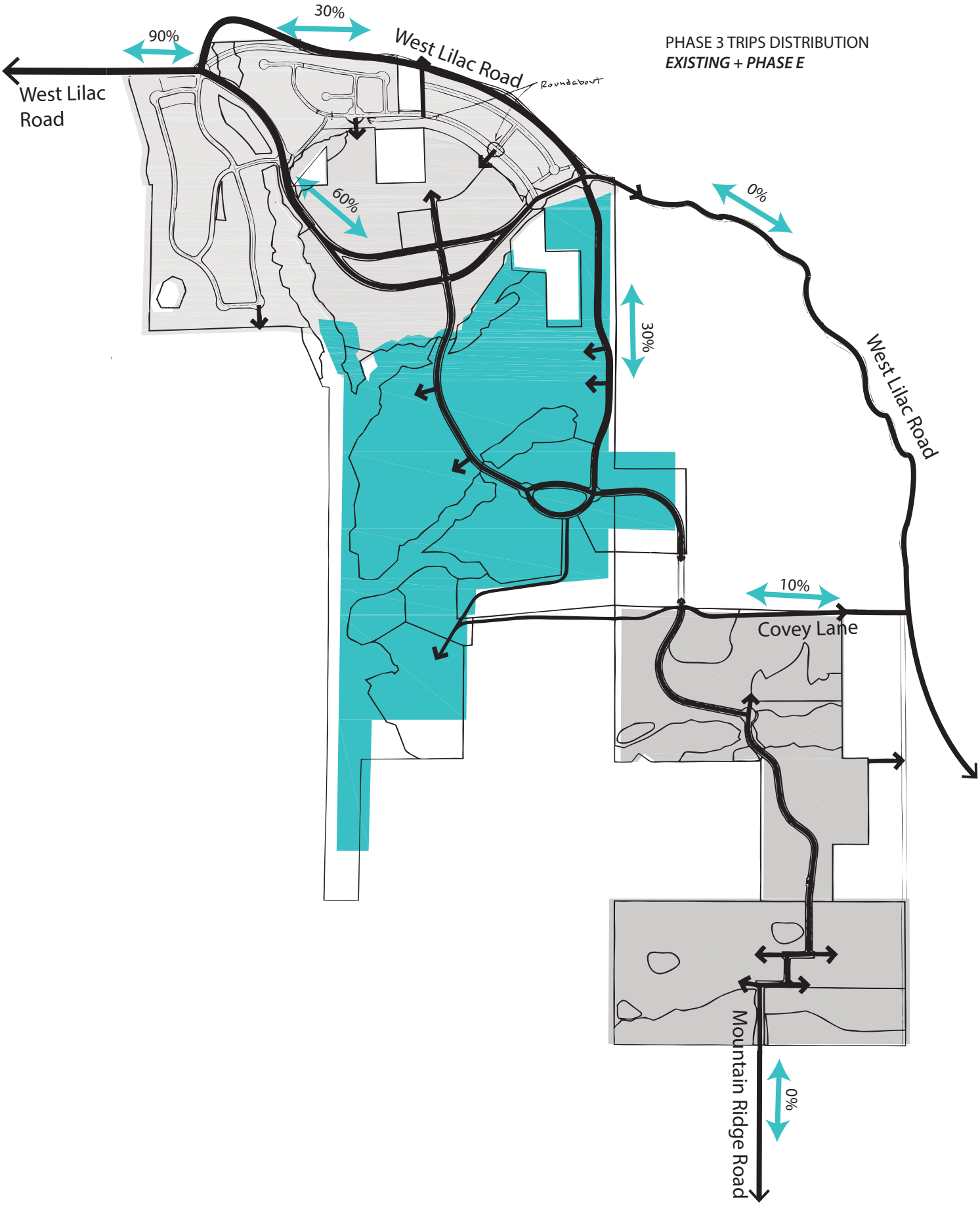
PHASE 1 TRIPS DISTRIBUTION
EXISTING + PHASE E



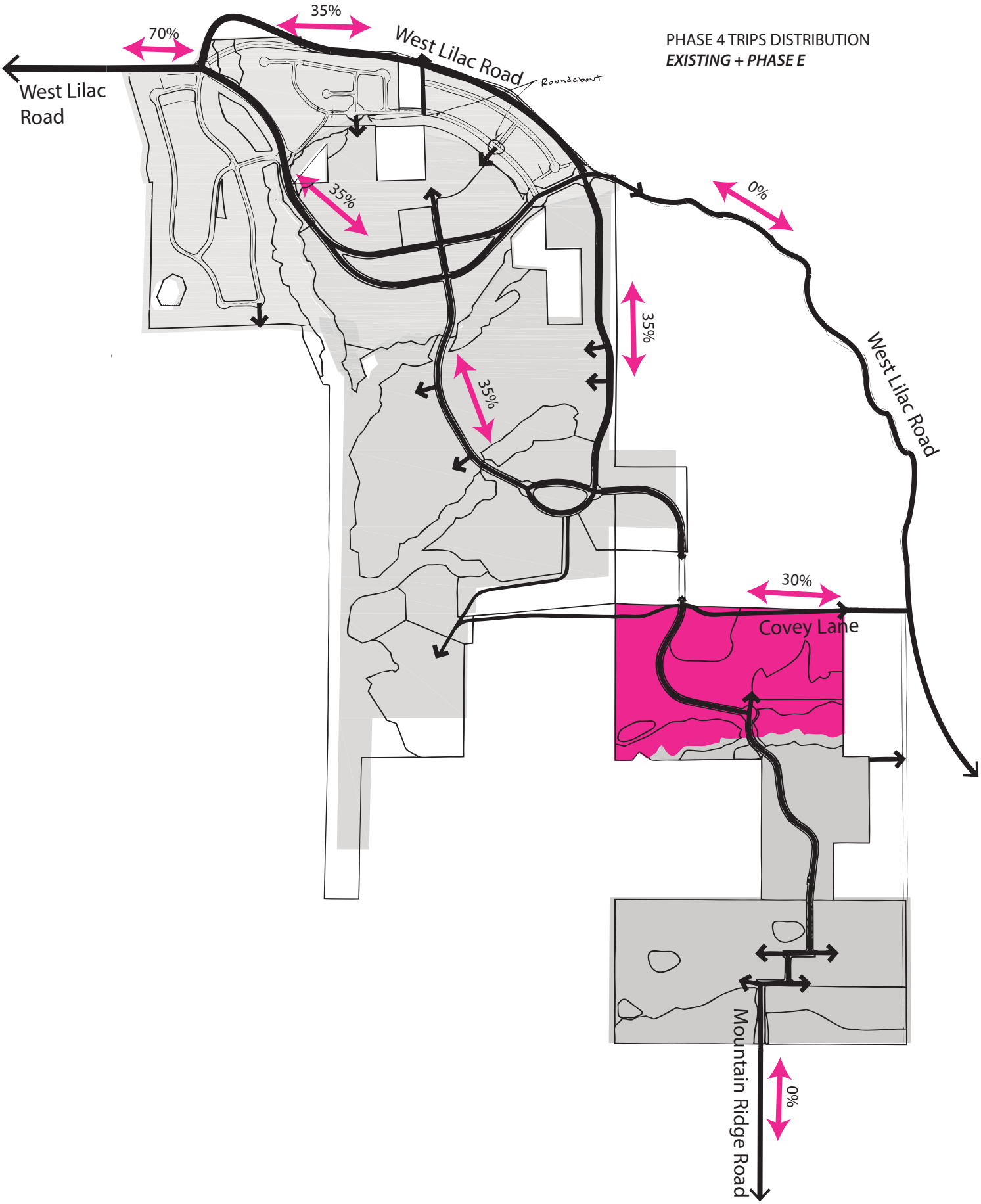
PHASE 2 TRIPS DISTRIBUTION
EXISTING + PHASE E



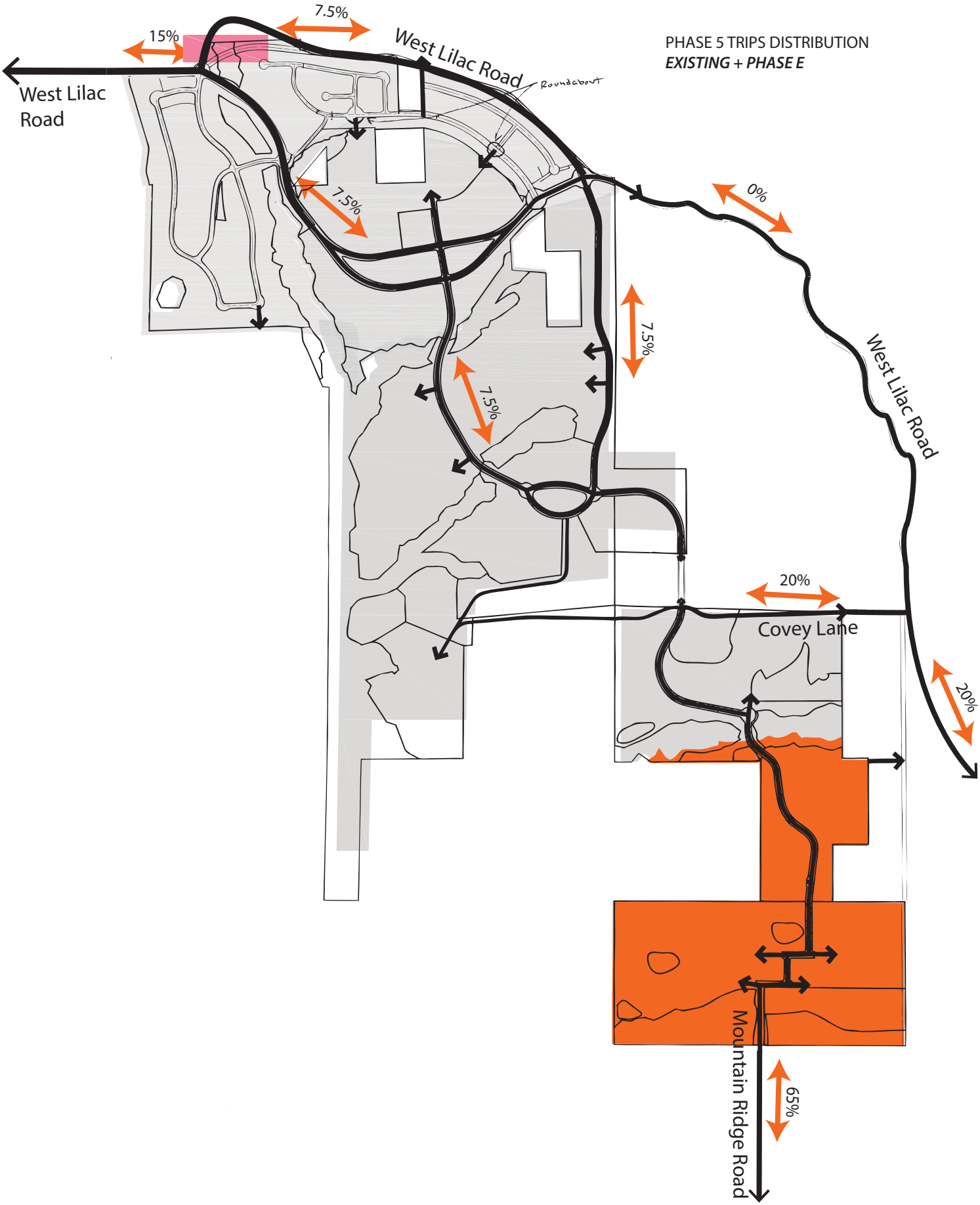
PHASE 3 TRIPS DISTRIBUTION
EXISTING + PHASE E

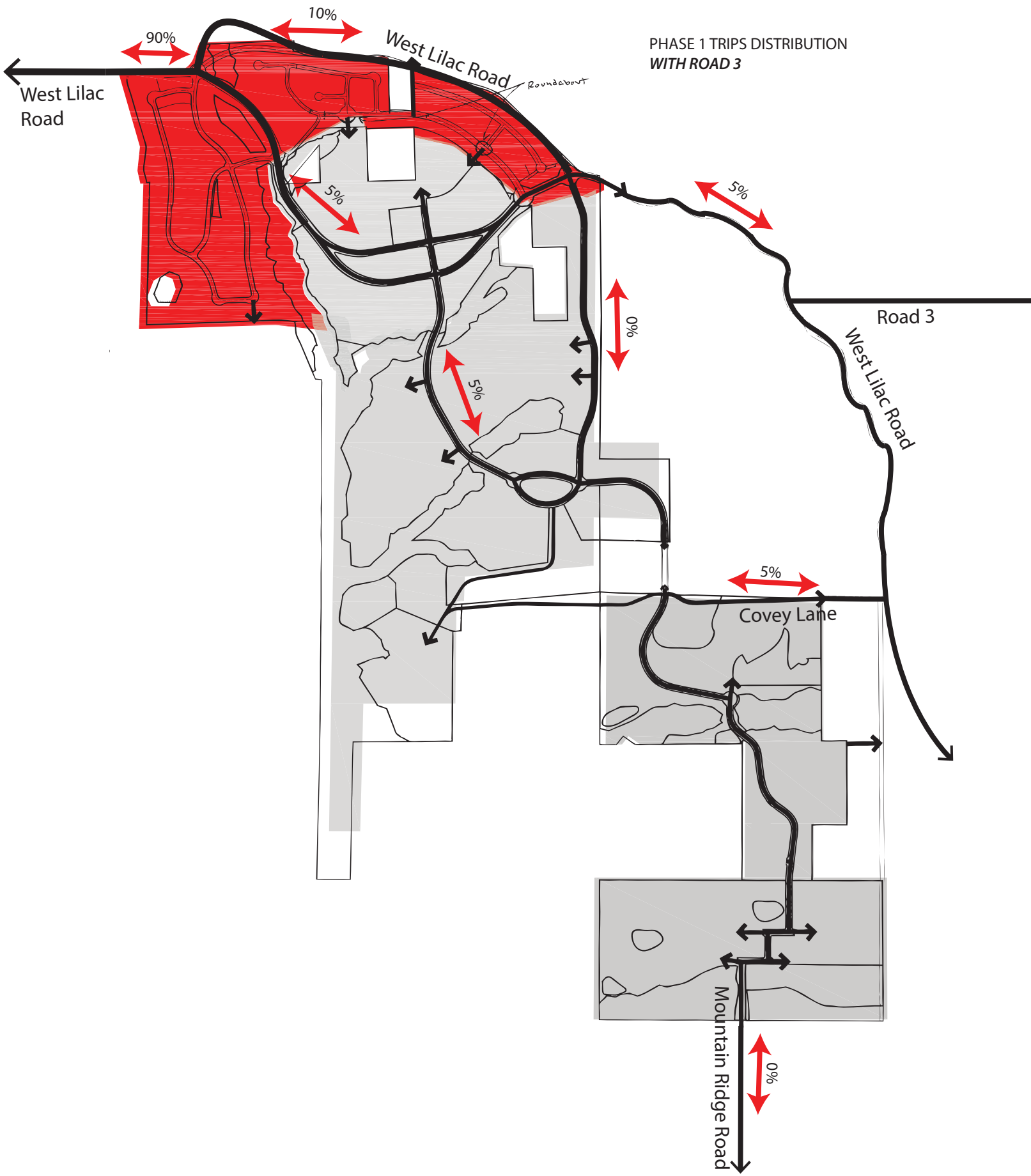


PHASE 4 TRIPS DISTRIBUTION
EXISTING + PHASE E

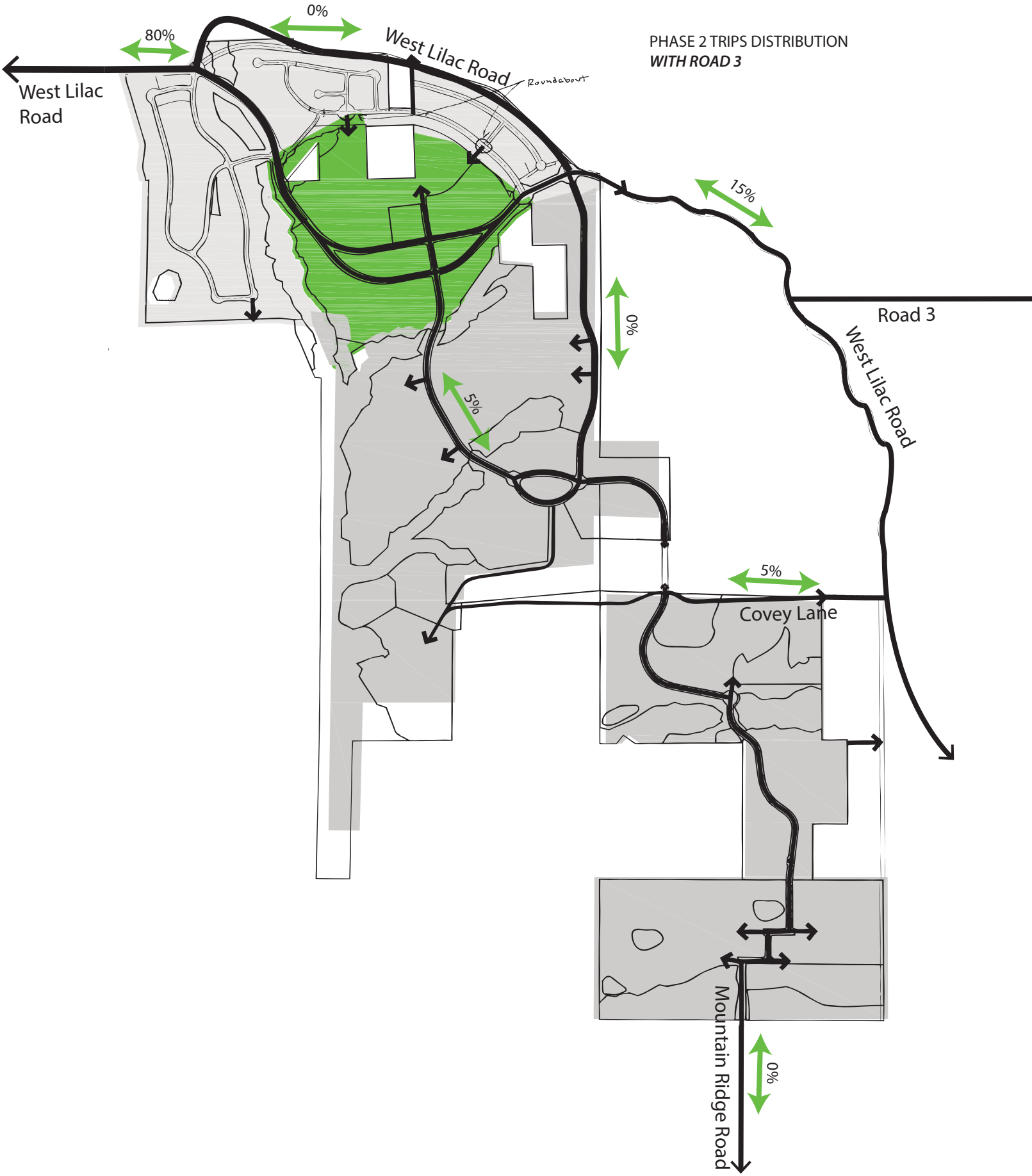


PHASE 5 TRIPS DISTRIBUTION
EXISTING + PHASE E

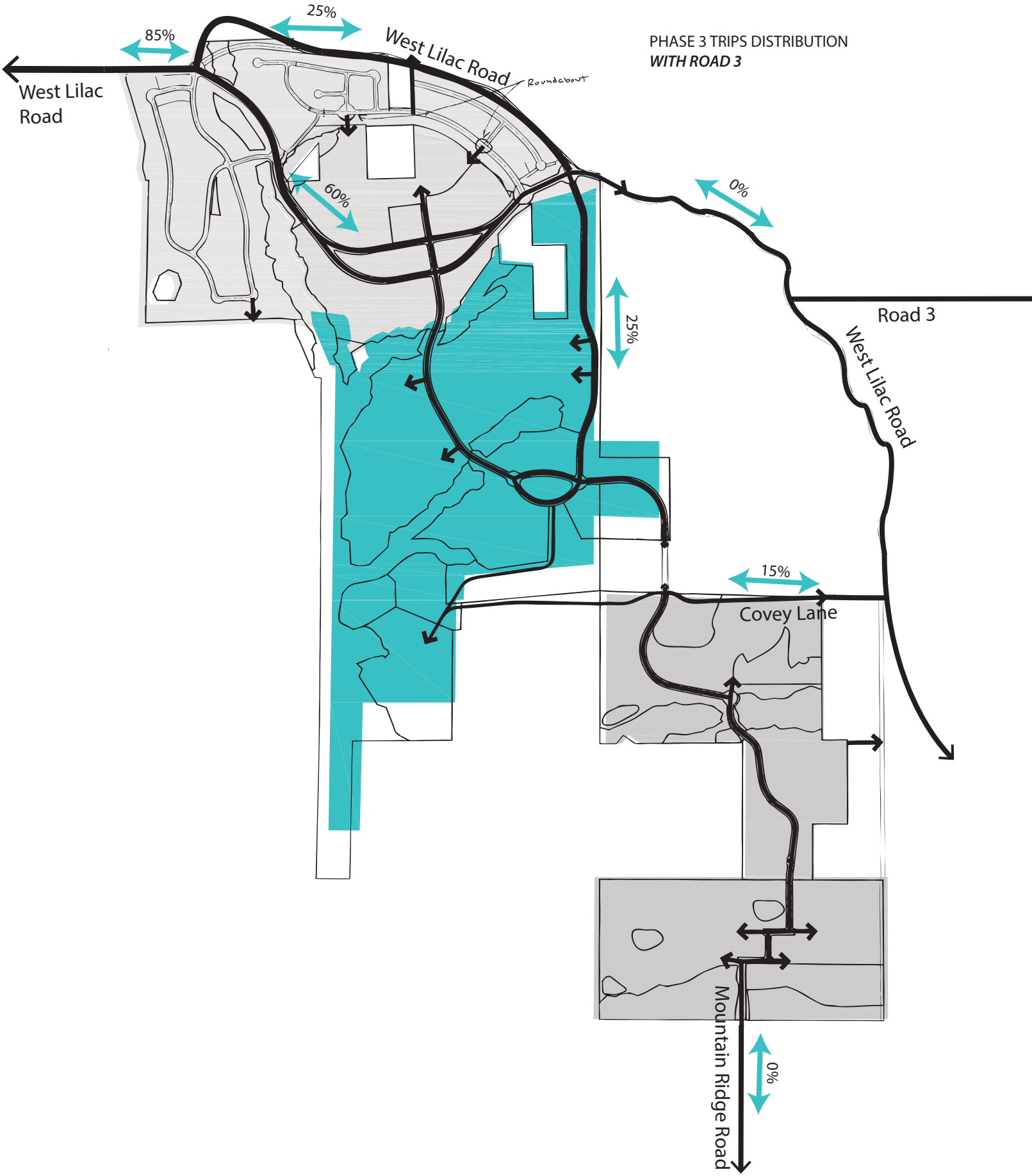



PHASE 1 TRIPS DISTRIBUTION
WITH ROAD 3
West Lilac Road
West Lilac Road
Roundabout
90%
10%
5%
5%
0%
5%
5%
0%
Road 3
West Lilac Road
Covey Lane
Mountain Ridge Road

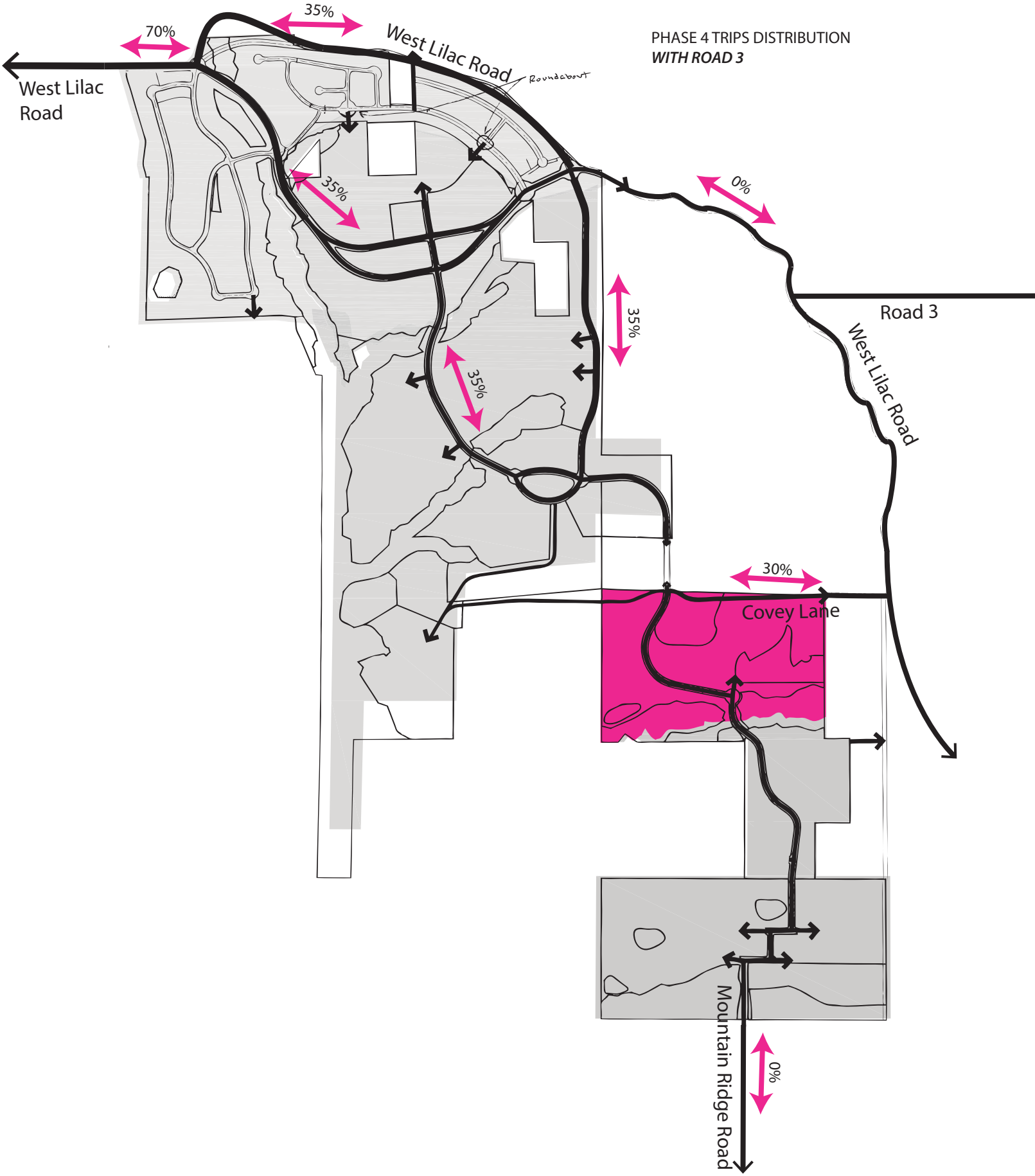
PHASE 2 TRIPS DISTRIBUTION
WITH ROAD 3

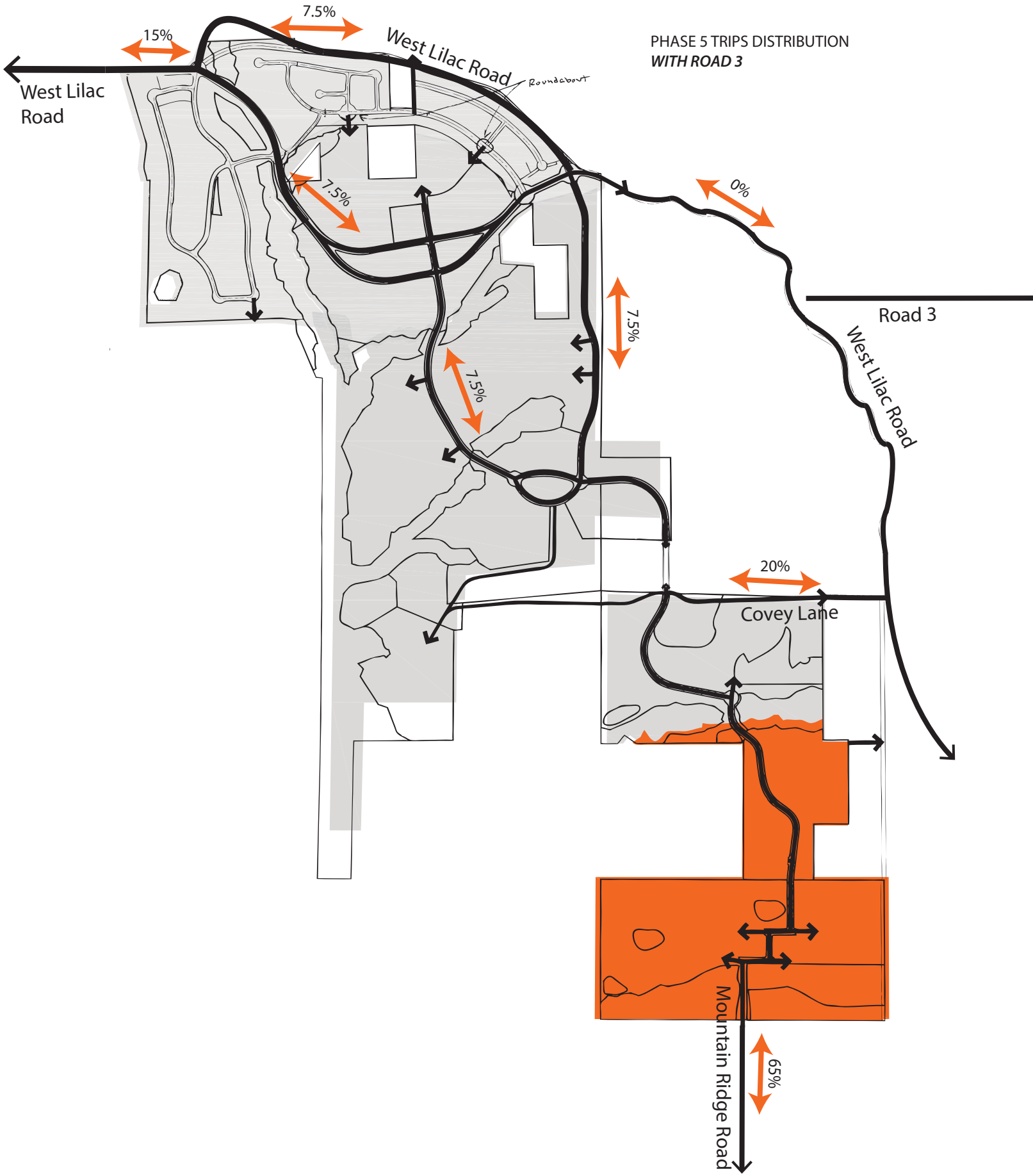


PHASE 3 TRIPS DISTRIBUTION
WITH ROAD 3

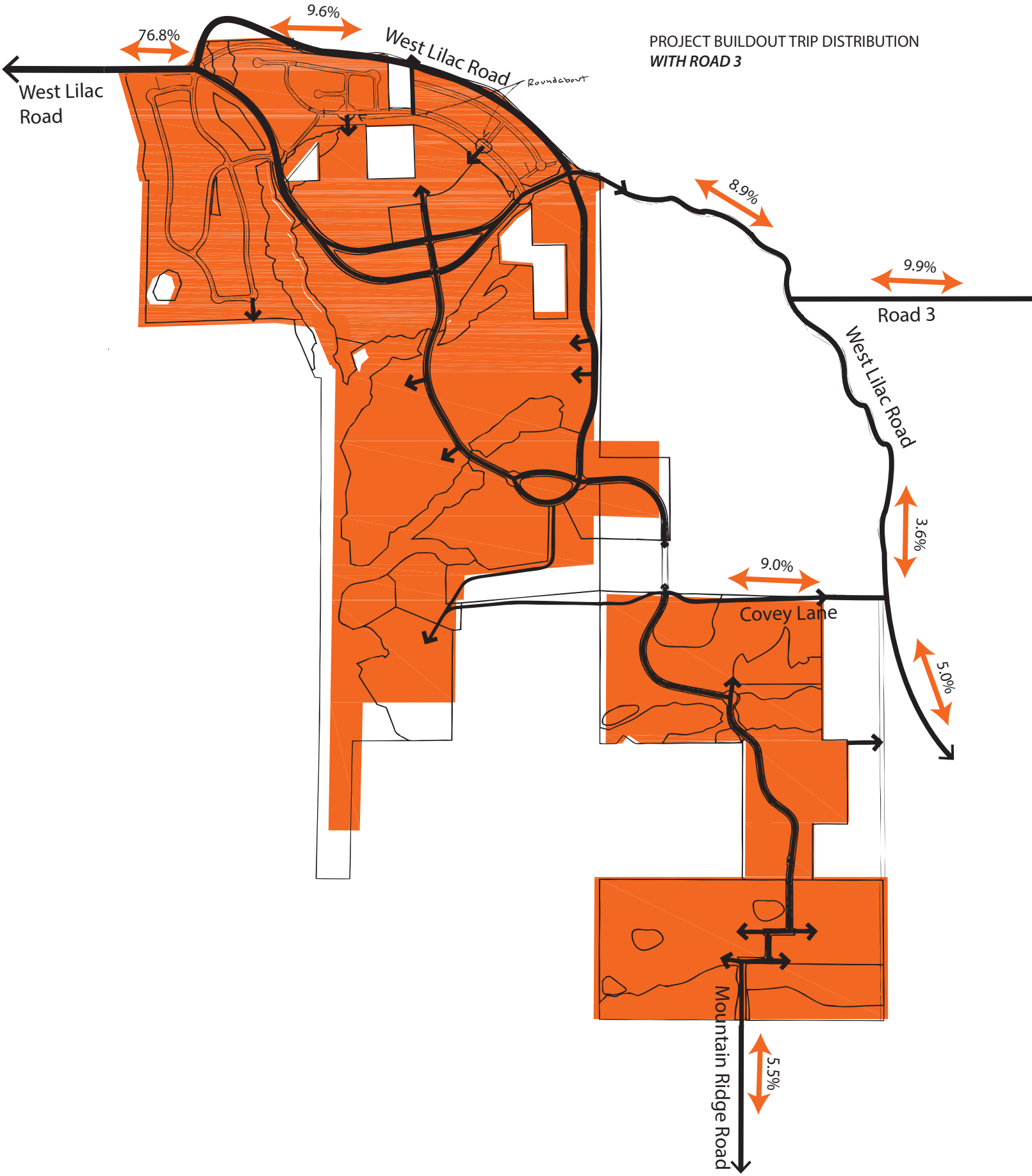


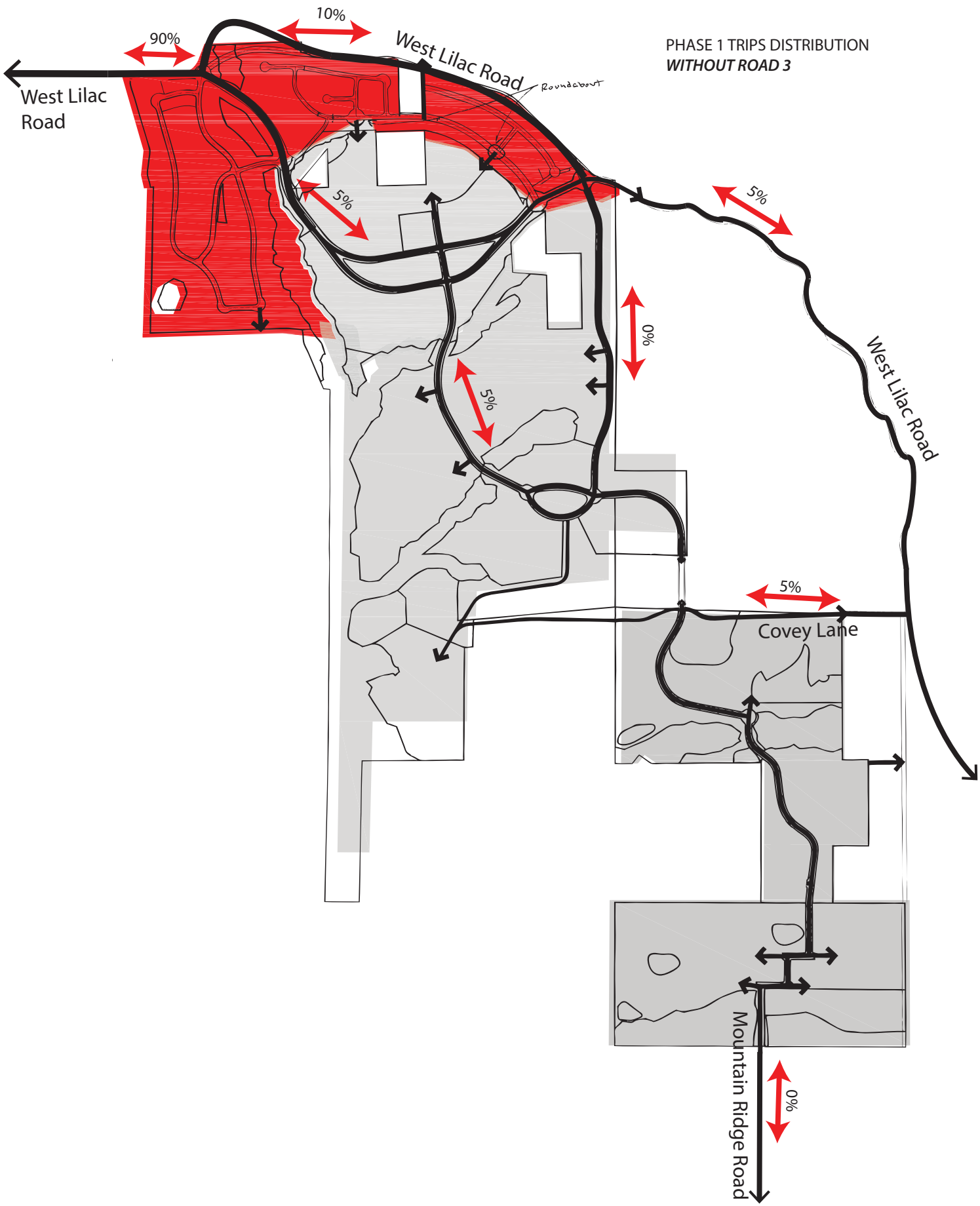
PHASE 4 TRIPS DISTRIBUTION
WITH ROAD 3

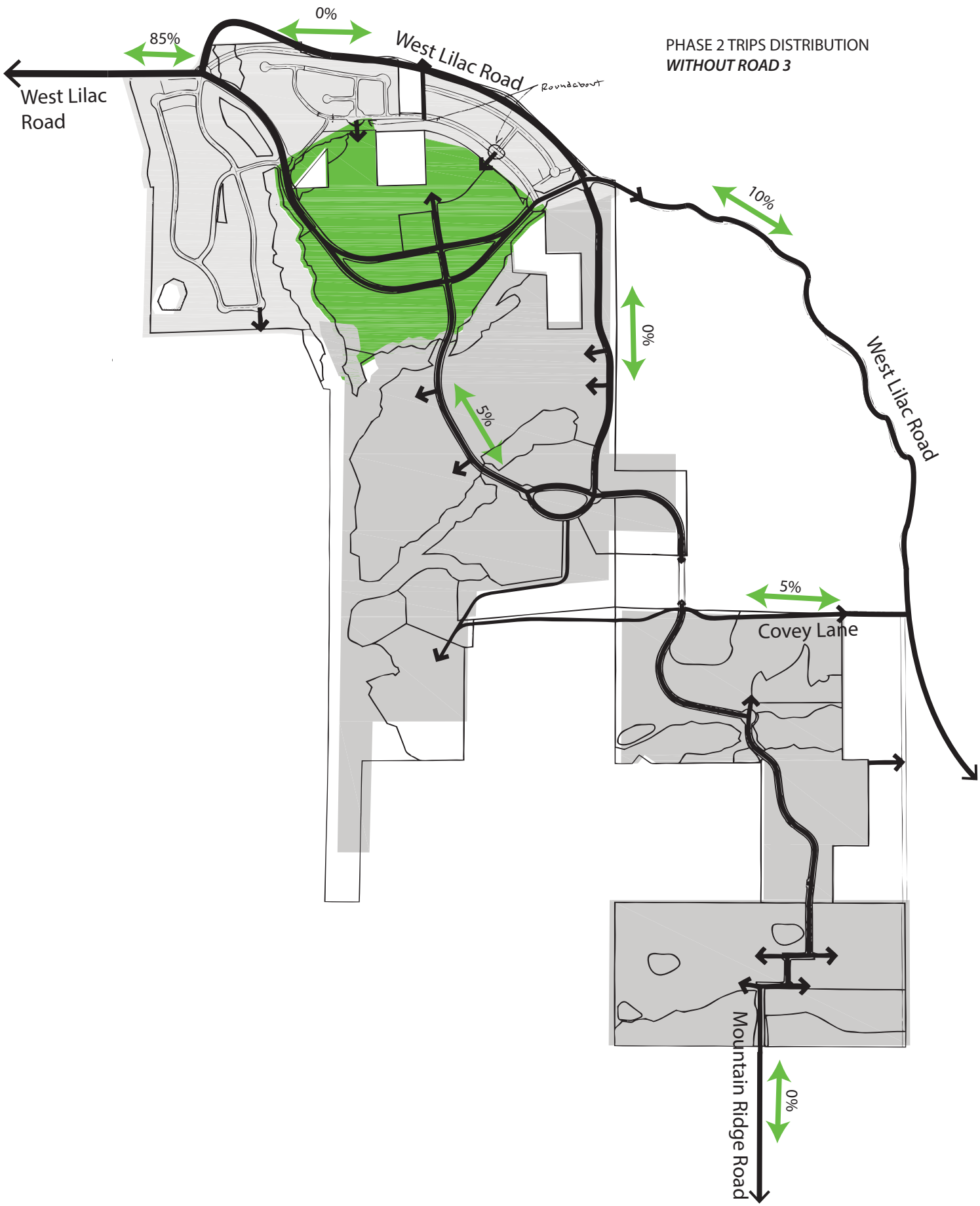



PHASE 5 TRIPS DISTRIBUTION
WITH ROAD 3
West Lilac Road
15%
7.5%
West Lilac Road
Roundabout
7.5%
0%
7.5%
7.5%
Road 3
West Lilac Road
20%
Covey Lane
Mountain Ridge Road
65%

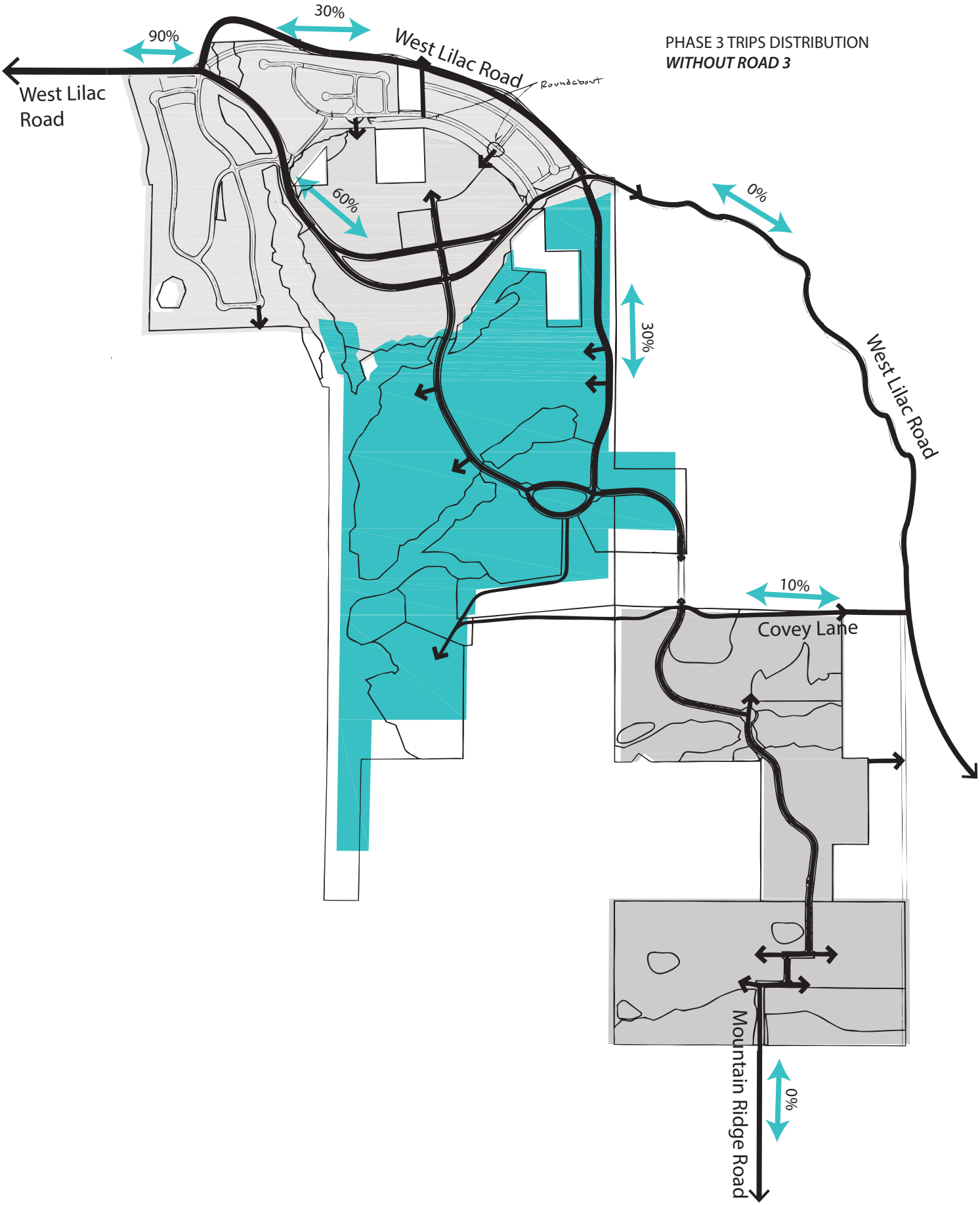
PROJECT BUILDOUT TRIP DISTRIBUTION
WITH ROAD 3



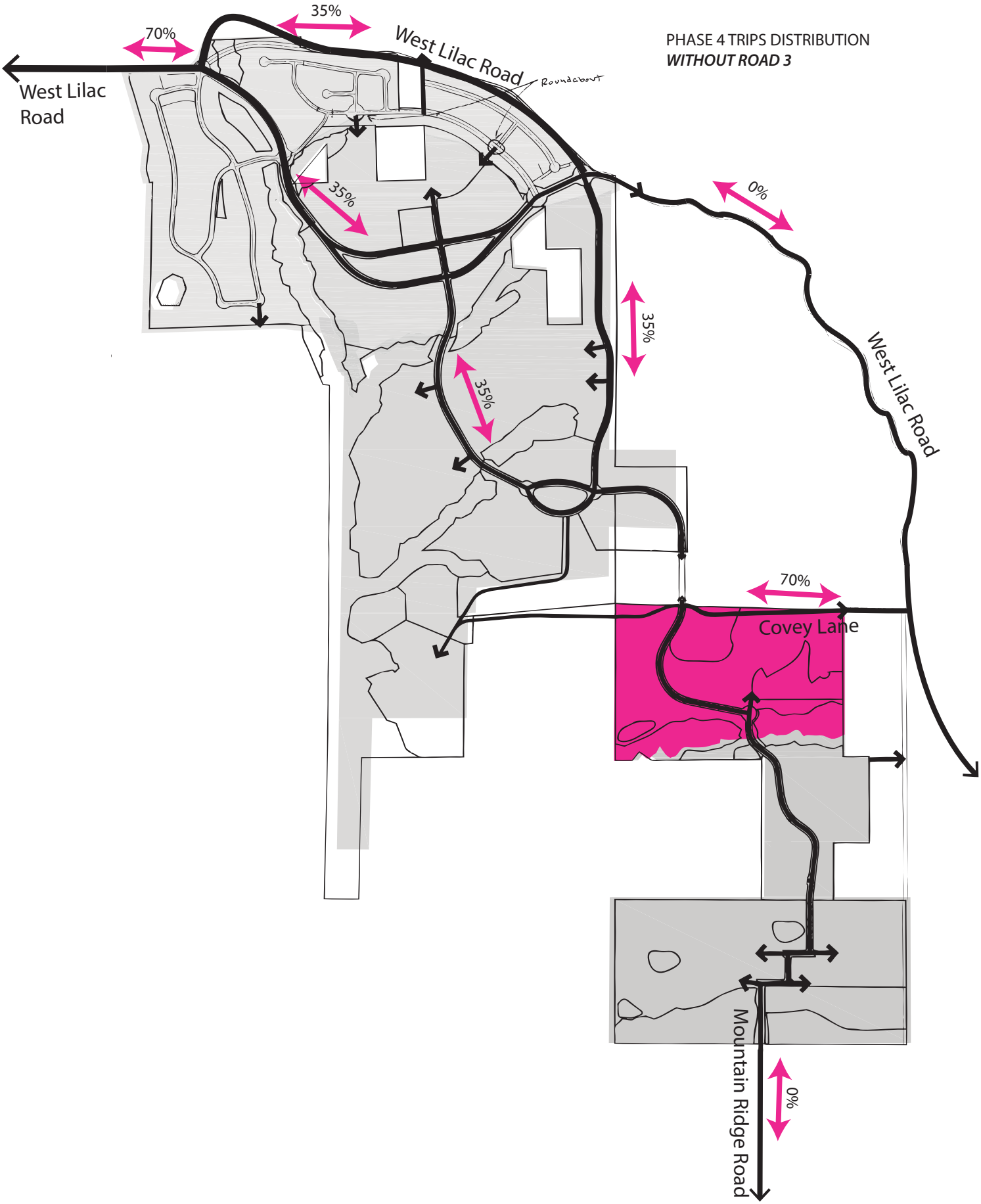

PHASE 1 TRIPS DISTRIBUTION
WITHOUT ROAD 3
West Lilac Road
West Lilac Road
Roundabout
90%
10%
5%
5%
5%
0%
5%
0%
West Lilac Road
Covey Lane
Mountain Ridge Road


PHASE 2 TRIPS DISTRIBUTION
WITHOUT ROAD 3
West Lilac Road
West Lilac Road
Roundabout
85%
0%
10%
0%
5%
5%
0%
West Lilac Road
Covey Lane
Mountain Ridge Road

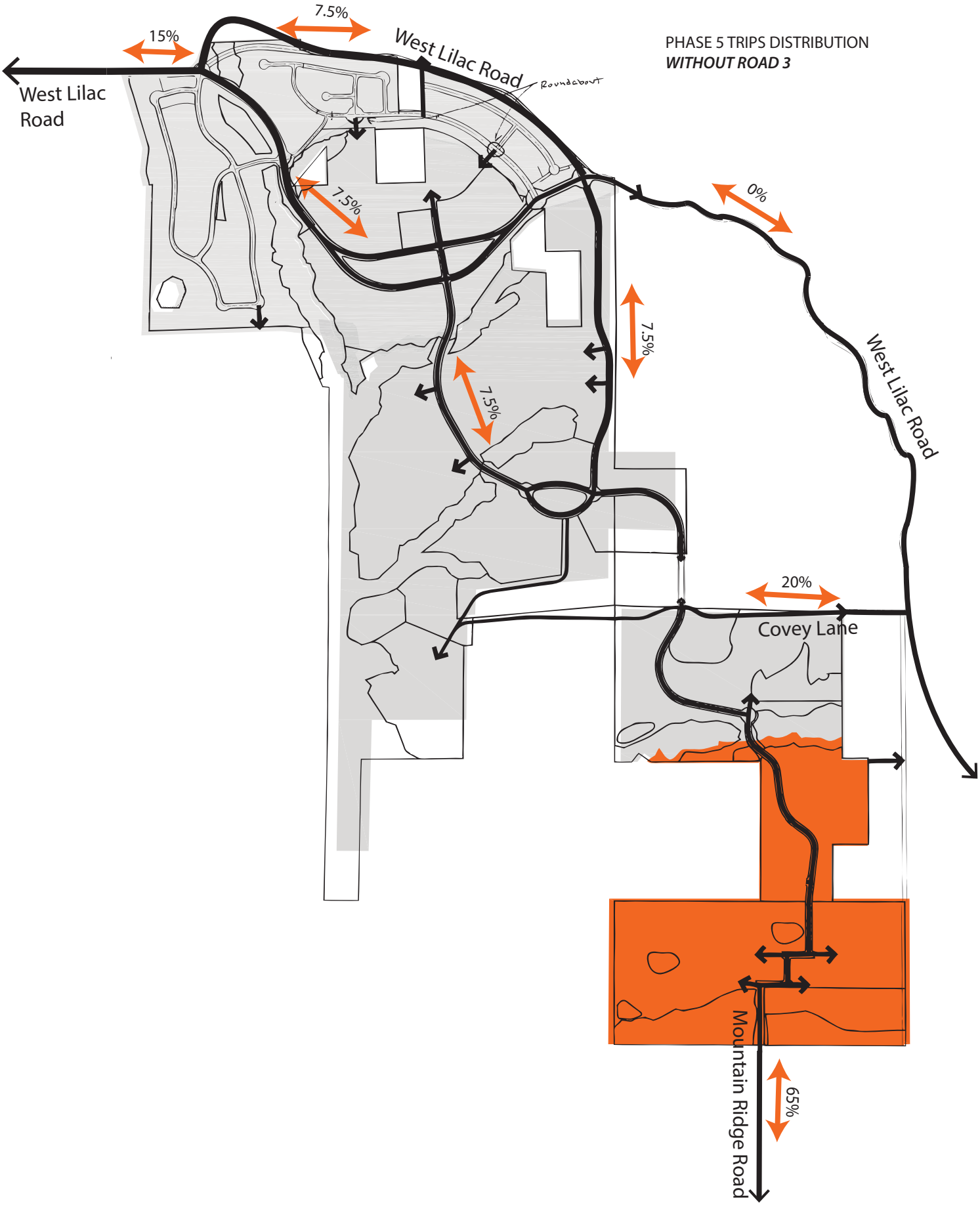
PHASE 3 TRIPS DISTRIBUTION
WITHOUT ROAD 3



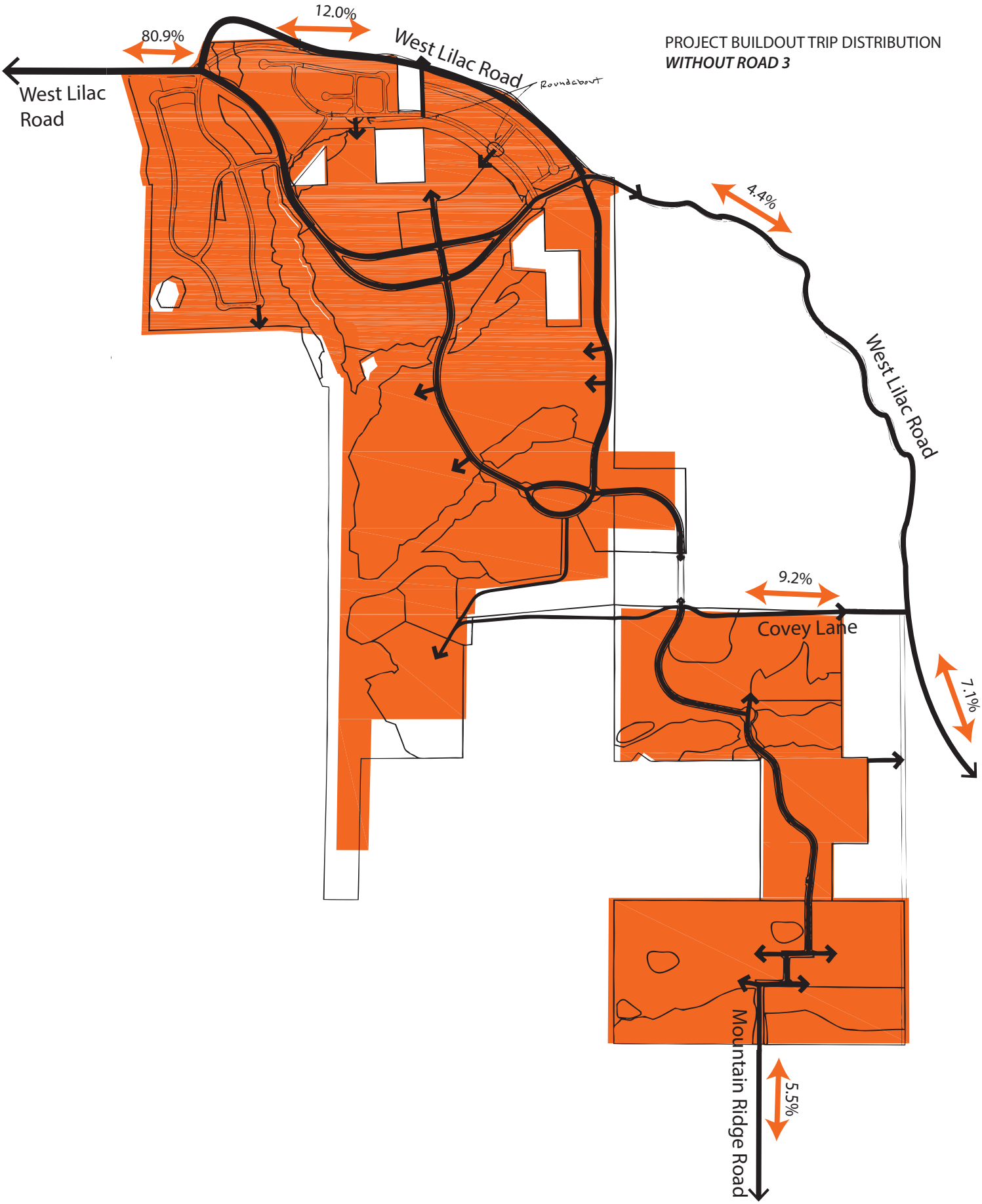
PHASE 4 TRIPS DISTRIBUTION
WITHOUT ROAD 3



PHASE 5 TRIPS DISTRIBUTION
WITHOUT ROAD 3



PROJECT BUILDOUT TRIP DISTRIBUTION
WITHOUT ROAD 3



Appendix M

LHR VMT Model Run – Land Use Assumptions

GENERAL PLAN UPDATE LAND USE - PCR2 - LHR SITE							
SERIES 10 - TAZ	NEW MODEL TAZ	CODE	NAME	TYPE	AMOUNT	PERSON	VEHICLE
157	4684	101	SINGLE FAMILY	du	108	2079	1381
157	4684	4112	RIGHT-OF-WAY	acre	27.8	0	0
157	4684	6105	FIRE OR POLICE STATION	site	1	434	318
183	4684	101	SINGLE FAMILY	du	227	4369	2903
183	4684	4112	RIGHT-OF-WAY	acre	42.3	0	0
183	4684	4113	COMMUNICATION OR UTILITY	acre	0.2	1	1

LILAC HILL RANCH LAND USE - LHR SITE						
TAZ	CODE	NAME	TYPE	AMOUNT	PERSON	VEHICLE
4683	111	LH SINGLE	du	853	8445	5894
4683	113	LH MULTI	du	425	2847	1999
4683	1410	CONGREG	du	200	720	506
4683	5025	STRIP CON	acre	6.9	3898	2759
4683	1512	LH BED &	room	20	326	201
4683	6102	CHURCH	acre	4.9	259	199
4683	6806	ELEMENT.	site	1	2117	1183
4683	7212	LH YMCA	acre	1.9	837	571
4683	7612	LH ACTIVE	acre	20	616	405
4683	6109	OTHER PU	acre	0.1	40	29
4683	2302	RECYCLIN	acre	3.6	27	22
4684	9101	INACTIVE	acre	243.7	0	0
4684		TOTAL			0	0
4683		TOTAL			20131	13767

Appendix N

LHR VMT Model Run – Mode Choice Reports

2050rc11h_nms12miles_MOD

2050RC11H\ VALLEY CENTER CPA WITHOUT ROAD 3B & 3C WITHOUT PROJECT

SUMMARY OF PERSON MILES BY MODE - TOTAL VALLEY CENTER CPA

MODE	HOME WORK	HOME COLL	HOME SCHL	HOME OTHER	NON HOME	SERVE PASS	TOTAL
Daily Summary							
Total Auto	116354.	0.	16618.	250448.	552656.	53531.	989607.
>Drive Alone	101935.	0.	3891.	130545.	317545.	15698.	569613.
>>Non-Toll	73528.	0.	3891.	122130.	307682.	15697.	522927.
>>Toll	28407.	0.	0.	8415.	9863.	1.	46686.
>Carpool-2 Person	11364.	0.	4820.	75794.	133385.	18771.	244132.
>>Non-Toll/Non-HOV	7028.	0.	4820.	69866.	131274.	18768.	231756.
>>Non-Toll/HOV	0.	0.	0.	0.	0.	0.	0.
>>Toll/HOV	4336.	0.	0.	5928.	2111.	2.	12377.
>Carpool-3+ Person	3055.	0.	7908.	44110.	101727.	19062.	175861.
>>Non-Toll/Non-HOV	1512.	0.	7897.	37422.	89694.	17362.	153888.
>>Non-Toll/HOV	1134.	0.	10.	3711.	10839.	1699.	17394.
>>Toll/HOV	410.	0.	0.	2976.	1193.	1.	4580.
Total Transit	3458.	0.	20.	2845.	3909.	0.	10233.
>Commuter Rail	29.	0.	0.	12.	78.	0.	119.
>Light Rail	1939.	0.	3.	1339.	1217.	0.	4497.
>BRT	944.	0.	1.	1171.	2523.	0.	4639.
>Express Bus	0.	0.	0.	0.	0.	0.	0.
>Local Bus	546.	0.	17.	323.	91.	0.	977.
>Walk	2952.	0.	18.	2530.	3909.	0.	9409.
>Drive	406.	0.	0.	198.	0.	0.	605.
>Driven	100.	0.	2.	118.	0.	0.	219.
School Bus	0.	0.	4974.	517.	448.	0.	5939.
Walk	43.	0.	329.	284.	114.	0.	769.
Bicycle	139.	0.	274.	296.	12.	0.	721.
Total	119994.	0.	22216.	254390.	557139.	53531.	1007269.
vehicle miles	108489.	0.	8560.	181044.	413302.	0.	711396.

Valley Center CPA without LHR Project without Road 3B & 3C - Vehicles Mile Travel (VMT)

11sep13/08:22:52/msmiles.pr

SUMMARY OF AVERAGE TRIP LENGTH IN MILES BY MODE - TOTAL VALLEY CENTER CPA

MODE	HOME WORK	HOME COLL	HOME SCHL	HOME OTHER	NON HOME	SERVE PASS	TOTAL
Daily Summary							
Total Auto	12.58	0.00	2.91	6.77	10.86	3.09	8.24

Valley Center CPA without LHR Project without Road 3B & 3C - Average Trip Length

>Drive Alone	12.39	0.00	2.94	6.70	10.77	3.05	8.95
>>Non-Toll	9.95	0.00	2.94	6.37	10.56	3.05	8.41
>>Toll	34.06	0.00	35.67	29.52	28.77	30.06	31.93
>Carpool-2 Person	13.66	0.00	2.89	6.73	10.74	3.01	7.53
>>Non-Toll/Non-HOV	9.99	0.00	2.89	6.31	10.64	3.01	7.24
>>Non-Toll/HOV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>>Toll/HOV	33.73	0.00	35.79	29.36	28.55	29.49	30.60
>Carpool-3+ Person	15.65	0.00	2.92	7.03	11.30	3.23	7.30
>>Non-Toll/Non-HOV	9.68	0.00	2.92	6.15	10.32	2.96	6.55
>>Non-Toll/HOV	42.35	0.00	60.86	41.28	39.46	39.02	39.98
>>Toll/HOV	33.33	0.00	45.54	29.66	29.42	31.36	29.89
Total Transit	23.61	0.00	5.67	25.87	37.66	0.00	28.13
>Commuter Rail	26.54	0.00	27.93	27.46	41.50	0.00	34.88
>Light Rail	33.23	0.00	8.59	34.89	38.30	0.00	34.91
>BRT	37.21	0.00	8.07	36.43	40.15	0.00	38.52
>Express Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Local Bus	8.86	0.00	5.30	8.28	12.49	0.00	8.79
>Walk	24.13	0.00	5.70	26.23	37.66	0.00	28.89
>Drive	20.19	0.00	5.04	22.28	0.00	0.00	20.79
>Driven	24.73	0.00	5.49	25.19	0.00	0.00	24.26
School Bus	0.00	0.00	5.49	18.31	22.49	0.00	6.22
Walk	0.71	0.00	0.97	0.77	0.53	0.00	0.79
Bicycle	2.36	0.00	2.54	2.21	2.77	0.00	2.36
Total	12.61	0.00	3.15	6.76	10.87	3.09	8.20

11sep13/08:22:52/msmiles.pr

2050rc11g_nms12miles_MOD

2050RC11G - VALLEY CENTER CPA WITH ROAD 3B & 3C - WITHOUT LHR PROJECT

SUMMARY OF PERSON MILES BY MODE - TOTAL VALLEY CENTER CPA

MODE	HOME WORK	HOME COLL	HOME SCHL	HOME OTHER	NON HOME	SERVE PASS	TOTAL
Daily Summary							
Total Auto	116458.	0.	17111.	251848.	551259.	54481.	991157.
>Drive Alone	102040.	0.	4005.	131294.	316738.	15982.	570060.
>>Non-Toll	73924.	0.	4005.	123201.	307466.	15981.	524578.
>>Toll	28116.	0.	0.	8093.	9272.	1.	45482.
>Carpool-2 Person	11359.	0.	4965.	76217.	133107.	19116.	244765.
>>Non-Toll/Non-HOV	7061.	0.	4965.	70504.	131121.	19114.	232766.
>>Non-Toll/HOV	0.	0.	0.	0.	0.	0.	0.
>>Toll/HOV	4298.	0.	0.	5713.	1986.	2.	11999.
>Carpool-3+ Person	3059.	0.	8141.	44337.	101414.	19382.	176332.
>>Non-Toll/Non-HOV	1520.	0.	8132.	37778.	89640.	17691.	154759.
>>Non-Toll/HOV	1133.	0.	9.	3706.	10666.	1690.	17205.
>>Toll/HOV	406.	0.	0.	2854.	1108.	1.	4369.
Total Transit	3454.	0.	20.	2861.	3913.	0.	10249.
>Commuter Rail	29.	0.	0.	12.	78.	0.	119.
>Light Rail	1939.	0.	3.	1347.	1218.	0.	4506.
>BRT	941.	0.	1.	1177.	2526.	0.	4645.
>Express Bus	0.	0.	0.	0.	0.	0.	0.
>Local Bus	545.	0.	16.	326.	91.	0.	978.
>Walk	2948.	0.	18.	2543.	3913.	0.	9422.
>Drive	406.	0.	0.	200.	0.	0.	606.
>Driven	100.	0.	2.	119.	0.	0.	220.
School Bus	0.	0.	5164.	520.	447.	0.	6132.
Walk	42.	0.	333.	282.	112.	0.	770.
Bicycle	139.	0.	275.	297.	12.	0.	722.
Total	120093.	0.	22904.	255808.	555744.	54481.	1009030.
vehicle miles	108594.	0.	8814.	182070.	412267.	0.	711744.

Valley Center CPA without LHR Project with Road 3B & 3C - Vehicles Mile Travel (VMT)

SUMMARY OF AVERAGE TRIP LENGTH IN MILES BY MODE - TOTAL VALLEY CENTER CPA

MODE	HOME WORK	HOME COLL	HOME SCHL	HOME OTHER	NON HOME	SERVE PASS	TOTAL
Daily Summary							
Total Auto	12.59	0.00	3.00	6.80	10.83	3.15	8.25
>Drive Alone	12.41	0.00	3.02	6.74	10.74	3.10	8.96

Valley Center CPA without LHR Project with Road 3B & 3C - Average Trip Length

>>Non-Toll	10.00	0.00	3.02	6.42	10.55	3.10	8.43
>>Toll	33.84	0.00	33.49	29.18	28.51	29.96	31.73
>Carpool-2 Person	13.65	0.00	2.98	6.76	10.72	3.06	7.55
>>Non-Toll/Non-HOV	10.03	0.00	2.98	6.37	10.62	3.06	7.27
>>Non-Toll/HOV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>>Toll/HOV	33.49	0.00	33.52	29.01	28.31	29.39	30.34
>Carpool-3+ Person	15.65	0.00	3.01	7.07	11.26	3.28	7.32
>>Non-Toll/Non-HOV	9.72	0.00	3.01	6.21	10.31	3.02	6.58
>>Non-Toll/HOV	42.39	0.00	61.01	41.29	39.43	39.06	39.98
>>Toll/HOV	32.87	0.00	43.15	29.27	29.17	31.29	29.55
Total Transit	23.58	0.00	5.74	25.82	37.68	0.00	28.11
>Commuter Rail	26.57	0.00	27.42	27.45	41.51	0.00	34.89
>Light Rail	33.23	0.00	8.52	34.88	38.31	0.00	34.91
>BRT	37.26	0.00	8.24	36.47	40.18	0.00	38.55
>Express Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Local Bus	8.82	0.00	5.37	8.25	12.48	0.00	8.76
>Walk	24.14	0.00	5.79	26.22	37.68	0.00	28.90
>Drive	20.02	0.00	5.03	21.99	0.00	0.00	20.59
>Driven	24.61	0.00	5.47	24.98	0.00	0.00	24.11
School Bus	0.00	0.00	5.70	18.09	22.17	0.00	6.42
Walk	0.71	0.00	0.97	0.77	0.53	0.00	0.79
Bicycle	2.40	0.00	2.57	2.23	2.79	0.00	2.39
Total	12.62	0.00	3.24	6.79	10.85	3.15	8.22

2050rc11f_nms12miles_MOD

2050RC11F - VALLEY CENTER CPA WITHOUT ROAD 3B & 3C WITH LHR PROJECT

SUMMARY OF PERSON MILES BY MODE - TOTAL VALLEY CENTER CPA

MODE	HOME WORK	HOME COLL	HOME SCHL	HOME OTHER	NON HOME	SERVE PASS	TOTAL
Daily Summary							
Total Auto	119585.	0.	17131.	264788.	586206.	56036.	1043747.
>Drive Alone	104806.	0.	4013.	138048.	336895.	16444.	600207.
>>Non-Toll	76071.	0.	4013.	129252.	326617.	16443.	552397.
>>Toll	28736.	0.	0.	8796.	10278.	1.	47811.
>Carpool-2 Person	11650.	0.	4966.	80181.	141555.	19673.	258025.
>>Non-Toll/Non-HOV	7278.	0.	4966.	73982.	139356.	19671.	245252.
>>Non-Toll/HOV	0.	0.	0.	0.	0.	0.	0.
>>Toll/HOV	4372.	0.	0.	6200.	2199.	2.	12773.
>Carpool-3+ Person	3129.	0.	8152.	46559.	107756.	19919.	185514.
>>Non-Toll/Non-HOV	1566.	0.	8143.	39618.	95254.	18210.	162790.
>>Non-Toll/HOV	1146.	0.	9.	3814.	11253.	1708.	17932.
>>Toll/HOV	416.	0.	0.	3126.	1249.	1.	4792.
Total Transit	3435.	0.	20.	2827.	3916.	0.	10198.
>Commuter Rail	29.	0.	0.	12.	78.	0.	119.
>Light Rail	1931.	0.	3.	1332.	1222.	0.	4487.
>BRT	930.	0.	1.	1159.	2523.	0.	4613.
>Express Bus	0.	0.	0.	0.	0.	0.	0.
>Local Bus	545.	0.	17.	324.	93.	0.	979.
>Walk	2931.	0.	18.	2512.	3916.	0.	9377.
>Drive	405.	0.	0.	197.	0.	0.	603.
>Driven	99.	0.	2.	117.	0.	0.	218.
School Bus	0.	0.	5054.	546.	473.	0.	6074.
Walk	50.	0.	417.	305.	119.	0.	890.
Bicycle	143.	0.	282.	310.	12.	0.	747.
Total	123213.	0.	22904.	268776.	590726.	56036.	1061656.
vehicle miles	111525.	0.	8825.	191441.	438460.	0.	750252.

Valley Center CPA with LHR Project without Road 3B & 3C - Vehicles Mile Travel (VMT)

SUMMARY OF AVERAGE TRIP LENGTH IN MILES BY MODE - TOTAL VALLEY CENTER CPA

MODE	HOME WORK	HOME COLL	HOME SCHL	HOME OTHER	NON HOME	SERVE PASS	TOTAL
Daily Summary							
Total Auto	12.41	0.00	2.72	6.69	10.86	3.02	8.15
>Drive Alone	12.23	0.00	2.74	6.63	10.77	2.98	8.87
>>Non-Toll	9.85	0.00	2.74	6.31	10.57	2.98	8.35
>>Toll	34.08	0.00	35.34	28.43	28.01	30.16	31.46
>Carpool-2 Person	13.46	0.00	2.70	6.65	10.75	2.94	7.45
>>Non-Toll/Non-HOV	9.88	0.00	2.70	6.25	10.64	2.94	7.17

Valley Center CPA with LHR Project without Road 3B & 3C - Average Trip Length

>>Non-Toll/HOV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>>Toll/HOV	33.80	0.00	35.45	28.28	27.82	29.59	29.86
>Carpool-3+ Person	15.38	0.00	2.73	6.95	11.28	3.14	7.20
>>Non-Toll/Non-HOV	9.57	0.00	2.73	6.10	10.33	2.89	6.47
>>Non-Toll/HOV	42.27	0.00	60.66	41.32	39.46	38.98	39.97
>>Toll/HOV	33.09	0.00	44.50	28.34	28.33	31.49	28.70
Total Transit	23.58	0.00	5.68	25.82	37.70	0.00	28.13
>Commuter Rail	26.56	0.00	27.82	27.48	41.51	0.00	34.90
>Light Rail	33.24	0.00	8.61	34.88	38.33	0.00	34.93
>BRT	37.18	0.00	8.17	36.43	40.20	0.00	38.54
>Express Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Local Bus	8.87	0.00	5.31	8.30	12.66	0.00	8.82
>Walk	24.13	0.00	5.72	26.19	37.70	0.00	28.90
>Drive	20.11	0.00	5.03	22.17	0.00	0.00	20.70
>Driven	24.58	0.00	5.49	25.12	0.00	0.00	24.16
School Bus	0.00	0.00	5.36	18.07	21.99	0.00	6.11
Walk	0.65	0.00	0.75	0.74	0.53	0.00	0.70
Bicycle	2.32	0.00	2.42	2.18	2.79	0.00	2.30
Total	12.42	0.00	2.90	6.68	10.87	3.02	8.11

2050rc11f_nms12miles_MOD_project only

2050RC11F - LHR PROJECT ONLY - WITHOUT ROAD 3.

SUMMARY OF PERSON MILES BY MODE - TOTAL LILAC HILLS RANCH

MODE	HOME WORK	HOME COLL	HOME SCHL	HOME OTHER	NON HOME	SERVE PASS	TOTAL
Daily Summary							
Total Auto	5276.	0.	478.	20710.	40701.	3889.	71055.
>Drive Alone	4620.	0.	114.	10803.	23427.	1151.	40115.
>>Non-Toll	3485.	0.	114.	10150.	22869.	1151.	37770.
>>Toll	1135.	0.	0.	653.	558.	0.	2345.
>Carpool-2 Person	513.	0.	136.	6297.	9878.	1386.	18210.
>>Non-Toll/Non-HOV	336.	0.	136.	5833.	9757.	1386.	17448.
>>Non-Toll/HOV	0.	0.	0.	0.	0.	0.	0.
>>Toll/HOV	177.	0.	0.	465.	120.	0.	762.
>Carpool-3+ Person	143.	0.	228.	3610.	7396.	1352.	12729.
>>Non-Toll/Non-HOV	74.	0.	228.	3114.	6709.	1294.	11419.
>>Non-Toll/HOV	54.	0.	0.	249.	613.	57.	974.
>>Toll/HOV	16.	0.	0.	247.	74.	0.	337.
Total Transit	0.	0.	0.	0.	0.	0.	0.
>Commuter Rail	0.	0.	0.	0.	0.	0.	0.
>Light Rail	0.	0.	0.	0.	0.	0.	0.
>BRT	0.	0.	0.	0.	0.	0.	0.
>Express Bus	0.	0.	0.	0.	0.	0.	0.
>Local Bus	0.	0.	0.	0.	0.	0.	0.
>Walk	0.	0.	0.	0.	0.	0.	0.
>Drive	0.	0.	0.	0.	0.	0.	0.
>Driven	0.	0.	0.	0.	0.	0.	0.
School Bus	0.	0.	64.	43.	31.	0.	138.
Walk	7.	0.	88.	22.	5.	0.	123.
Bicycle	5.	0.	8.	19.	1.	0.	34.
Total	5289.	0.	638.	20795.	40738.	3889.	71349.
vehicle miles	4917.	0.	247.	14983.	30479.	0.	50627.

LHR Project Only without Road 3B & 3C - Vehicles Mile Travel (VMT)

♀ SUMMARY OF AVERAGE TRIP LENGTH IN MILES BY MODE - TOTAL LILAC HILLS RANCH

MODE	HOME WORK	HOME COLL	HOME SCHL	HOME OTHER	NON HOME	SERVE PASS	TOTAL
Daily Summary							
Total Auto	10.66	0.00	0.81	6.62	11.54	2.43	7.60
>Drive Alone	10.50	0.00	0.81	6.58	11.47	2.41	8.46
>>Non-Toll	8.60	0.00	0.81	6.33	11.37	2.41	8.14

LHR Project Only without Road 3B & 3C - Average Trip Length

>>Toll	32.88	0.00	17.44	17.84	18.17	31.79	23.04
>Carpool-2 Person	11.51	0.00	0.82	6.54	11.44	2.40	6.96
>>Non-Toll/Non-HOV	8.58	0.00	0.82	6.23	11.38	2.40	6.77
>>Non-Toll/HOV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>>Toll/HOV	32.86	0.00	17.55	17.78	18.28	31.49	20.00
>Carpool-3+ Person	13.47	0.00	0.81	6.86	11.89	2.47	6.40
>>Non-Toll/Non-HOV	8.28	0.00	0.81	6.15	11.14	2.37	5.87
>>Non-Toll/HOV	46.28	0.00	61.19	42.17	39.51	34.73	40.15
>>Toll/HOV	27.21	0.00	24.22	17.03	17.01	36.63	17.34
Total Transit	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Commuter Rail	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Light Rail	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>BRT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Express Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Local Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Walk	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Drive	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Driven	0.00	0.00	0.00	0.00	0.00	0.00	0.00
School Bus	0.00	0.00	1.82	15.79	16.12	0.00	3.46
Walk	0.44	0.00	0.41	0.47	0.46	0.00	0.42
Bicycle	1.67	0.00	0.89	2.03	3.47	0.00	1.53
Total	10.28	0.00	0.75	6.52	11.50	2.43	7.36

2050rc11e_nms12miles_MOD

2050RC11E - VALLEY CENTER CPA WITH ROAD 3B & 3C WITH LHR PROJECT

SUMMARY OF PERSON MILES BY MODE - TOTAL VALLEY CENTER CPA

MODE	HOME WORK	HOME COLL	HOME SCHL	HOME OTHER	NON HOME	SERVE PASS	TOTAL
Daily Summary							
Total Auto	119649.	0.	17659.	266500.	585025.	57102.	1045936.
>Drive Alone	104859.	0.	4135.	138950.	336197.	16764.	600905.
>>Non-Toll	76269.	0.	4135.	130392.	326413.	16763.	553972.
>>Toll	28589.	0.	0.	8558.	9784.	1.	46933.
>Carpool-2 Person	11665.	0.	5122.	80696.	141314.	20063.	258859.
>>Non-Toll/Non-HOV	7292.	0.	5122.	74654.	139217.	20061.	246346.
>>Non-Toll/HOV	0.	0.	0.	0.	0.	0.	0.
>>Toll/HOV	4372.	0.	0.	6042.	2098.	2.	12514.
>Carpool-3+ Person	3126.	0.	8402.	46854.	107514.	20275.	186171.
>>Non-Toll/Non-HOV	1572.	0.	8393.	39998.	95213.	18581.	163757.
>>Non-Toll/HOV	1141.	0.	9.	3827.	11125.	1693.	17796.
>>Toll/HOV	413.	0.	0.	3029.	1176.	1.	4618.
Total Transit	3425.	0.	20.	2842.	3893.	0.	10180.
>Commuter Rail	29.	0.	0.	12.	77.	0.	118.
>Light Rail	1925.	0.	3.	1338.	1217.	0.	4483.
>BRT	927.	0.	1.	1166.	2508.	0.	4601.
>Express Bus	0.	0.	0.	0.	0.	0.	0.
>Local Bus	543.	0.	17.	326.	91.	0.	977.
>Walk	2922.	0.	18.	2524.	3893.	0.	9357.
>Drive	404.	0.	0.	199.	0.	0.	604.
>Driven	99.	0.	2.	118.	0.	0.	219.
School Bus	0.	0.	5251.	551.	473.	0.	6275.
Walk	48.	0.	421.	302.	118.	0.	889.
Bicycle	143.	0.	283.	313.	12.	0.	752.
Total	123266.	0.	23635.	270507.	589521.	57102.	1064031.
vehicle miles	111584.	0.	9097.	192685.	437572.	0.	750938.

Valley Center CPA with LHR Project with Road 3B & 3C - Vehicles Mile Travel (VMT)

SUMMARY OF AVERAGE TRIP LENGTH IN MILES BY MODE - TOTAL VALLEY CENTER CPA

MODE	HOME WORK	HOME COLL	HOME SCHL	HOME OTHER	NON HOME	SERVE PASS	TOTAL
Daily Summary							
Total Auto	12.41	0.00	2.81	6.74	10.83	3.08	8.17
>Drive Alone	12.23	0.00	2.82	6.68	10.75	3.03	8.88
>>Non-Toll	9.87	0.00	2.82	6.36	10.56	3.03	8.38
>>Toll	33.80	0.00	33.14	28.21	27.74	29.99	31.25
>Carpool-2 Person	13.46	0.00	2.79	6.70	10.73	3.00	7.48
>>Non-Toll/Non-HOV	9.91	0.00	2.79	6.31	10.63	3.00	7.20

Valley Center CPA with LHR Project with Road 3B & 3C - Average Trip Length

>>Non-Toll/HOV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>>Toll/HOV	33.46	0.00	33.16	28.04	27.57	29.43	29.64
>Carpool-3+ Person	15.37	0.00	2.81	6.99	11.26	3.20	7.22
>>Non-Toll/Non-HOV	9.60	0.00	2.81	6.16	10.32	2.95	6.51
>>Non-Toll/HOV	42.47	0.00	60.97	41.33	39.44	38.90	39.97
>>Toll/HOV	32.67	0.00	42.50	28.11	28.10	31.37	28.46
Total Transit	23.54	0.00	5.72	25.78	37.64	0.00	28.07
>Commuter Rail	26.59	0.00	27.48	27.47	41.50	0.00	34.90
>Light Rail	33.22	0.00	8.50	34.85	38.30	0.00	34.90
>BRT	37.21	0.00	8.10	36.43	40.13	0.00	38.51
>Express Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Local Bus	8.83	0.00	5.36	8.27	12.47	0.00	8.78
>Walk	24.12	0.00	5.77	26.19	37.64	0.00	28.87
>Drive	19.93	0.00	5.00	21.89	0.00	0.00	20.50
>Driven	24.45	0.00	5.45	24.88	0.00	0.00	23.98
School Bus	0.00	0.00	5.57	17.87	21.71	0.00	6.31
Walk	0.65	0.00	0.76	0.74	0.53	0.00	0.71
Bicycle	2.36	0.00	2.44	2.21	2.81	0.00	2.33
Total	12.42	0.00	2.99	6.72	10.85	3.08	8.12

2050rc11e_nms12miles_mod_PROJECT ONLY

2050RC11E - LHR PROJECT ONLY WITH ROAD 3B & 3C

SUMMARY OF PERSON MILES BY MODE - TOTAL LILAC HILLS RANCH

MODE	HOME WORK	HOME COLL	HOME SCHL	HOME OTHER	NON HOME	SERVE PASS	TOTAL
Daily Summary							
Total Auto	5213.	0.	503.	20575.	40787.	4006.	71084.
>Drive Alone	4566.	0.	120.	10735.	23476.	1187.	40083.
>>Non-Toll	3467.	0.	120.	10105.	22924.	1187.	37802.
>>Toll	1099.	0.	0.	630.	552.	0.	2281.
>Carpool-2 Person	505.	0.	144.	6255.	9900.	1429.	18234.
>>Non-Toll/Non-HOV	334.	0.	144.	5807.	9781.	1429.	17495.
>>Non-Toll/HOV	0.	0.	0.	0.	0.	0.	0.
>>Toll/HOV	171.	0.	0.	448.	119.	0.	738.
>Carpool-3+ Person	141.	0.	240.	3586.	7411.	1390.	12768.
>>Non-Toll/Non-HOV	73.	0.	240.	3103.	6727.	1335.	11478.
>>Non-Toll/HOV	53.	0.	0.	245.	610.	55.	963.
>>Toll/HOV	15.	0.	0.	238.	73.	0.	327.
Total Transit	0.	0.	0.	0.	0.	0.	0.
>Commuter Rail	0.	0.	0.	0.	0.	0.	0.
>Light Rail	0.	0.	0.	0.	0.	0.	0.
>BRT	0.	0.	0.	0.	0.	0.	0.
>Express Bus	0.	0.	0.	0.	0.	0.	0.
>Local Bus	0.	0.	0.	0.	0.	0.	0.
>Walk	0.	0.	0.	0.	0.	0.	0.
>Drive	0.	0.	0.	0.	0.	0.	0.
>Driven	0.	0.	0.	0.	0.	0.	0.
School Bus	0.	0.	68.	42.	31.	0.	141.
Walk	7.	0.	87.	21.	5.	0.	120.
Bicycle	6.	0.	8.	21.	1.	0.	36.
Total	5226.	0.	667.	20660.	40824.	4006.	71383.
vehicle miles	4859.	0.	260.	14887.	30544.	0.	50549.

Lilac Hills Ranch Project Only Vehicles Mile Travel (VMT)

Lilac Hills Ranch Project Only Average Trip Length

SUMMARY OF AVERAGE TRIP LENGTH IN MILES BY MODE - TOTAL LILAC HILLS RANCH

MODE	HOME WORK	HOME COLL	HOME SCHL	HOME OTHER	NON HOME	SERVE PASS	TOTAL
Daily Summary							
Total Auto	10.52	0.00	0.85	6.57	11.56	2.50	7.60
>Drive Alone	10.37	0.00	0.84	6.54	11.49	2.48	8.45
>>Non-Toll	8.52	0.00	0.84	6.29	11.39	2.48	8.14
>>Toll	32.82	0.00	19.14	17.80	18.14	31.68	22.97
>Carpool-2 Person	11.35	0.00	0.86	6.50	11.46	2.47	6.97
>>Non-Toll/Non-HOV	8.50	0.00	0.86	6.20	11.40	2.47	6.78

>>Non-Toll/HOV	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>>Toll/HOV	32.82	0.00	19.16	17.73	18.25	31.38	19.95
>Carpool-3+ Person	13.32	0.00	0.85	6.81	11.90	2.53	6.41
>>Non-Toll/Non-HOV	8.22	0.00	0.85	6.12	11.16	2.44	5.89
>>Non-Toll/HOV	46.36	0.00	61.19	42.16	39.50	34.42	40.13
>>Toll/HOV	27.13	0.00	25.53	16.98	16.99	37.09	17.29
Total Transit	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Commuter Rail	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Light Rail	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>BRT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Express Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Local Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Walk	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Drive	0.00	0.00	0.00	0.00	0.00	0.00	0.00
>Driven	0.00	0.00	0.00	0.00	0.00	0.00	0.00
School Bus	0.00	0.00	1.89	15.50	16.13	0.00	3.49
Walk	0.44	0.00	0.41	0.47	0.46	0.00	0.42
Bicycle	1.80	0.00	0.94	2.17	3.53	0.00	1.64
Total	10.16	0.00	0.79	6.48	11.52	2.50	7.36

Appendix O

Bird Song Drive Traffic Operation Analysis

CHEN RYAN

MEMORANDUM

TO: Mr. Jon Rilling, Accretive Investments, Inc.

FROM: Phuong Nguyen, PE, Chen Ryan Associates

DATE: November 22, 2013

RE: Lilac Hills Ranch - Birdsong Drive Traffic Operations Assessment

The purpose of this memorandum is to document the projected traffic operations at the Birdsong Drive / W. Lilac Road intersection after the construction of the first phase of Phase 1 of the Lilac Hills Ranch development. Complete details regarding the proposed Lilac Hills Ranch development including a project description, proposed land uses, phasing, estimated trip generation and assumed project trip distribution is documented in the Lilac Hills Ranch Traffic Impact Study (TIS).

Background

As documented in the TIS, Main Street will serve as the primary access point for the Lilac Hills Ranch development and Street "Z" will serve as the developments secondary access point. However, Street "Z" between Birdsong Drive and Main Street, as well as Main Street between Street "Z" and W. Lilac Road will not be constructed until the latter part of Phase A (Phase 1B), leaving the project without a secondary access point during the initial occupancy of the first phase of Phase 1. During this interim time period, Birdsong Drive is proposed to be used as the secondary access point for the development. **Figure 1** displays the site plan for the first phase of Phase 1, as well as the access roadways to be completed during the first phase of Phase 1.

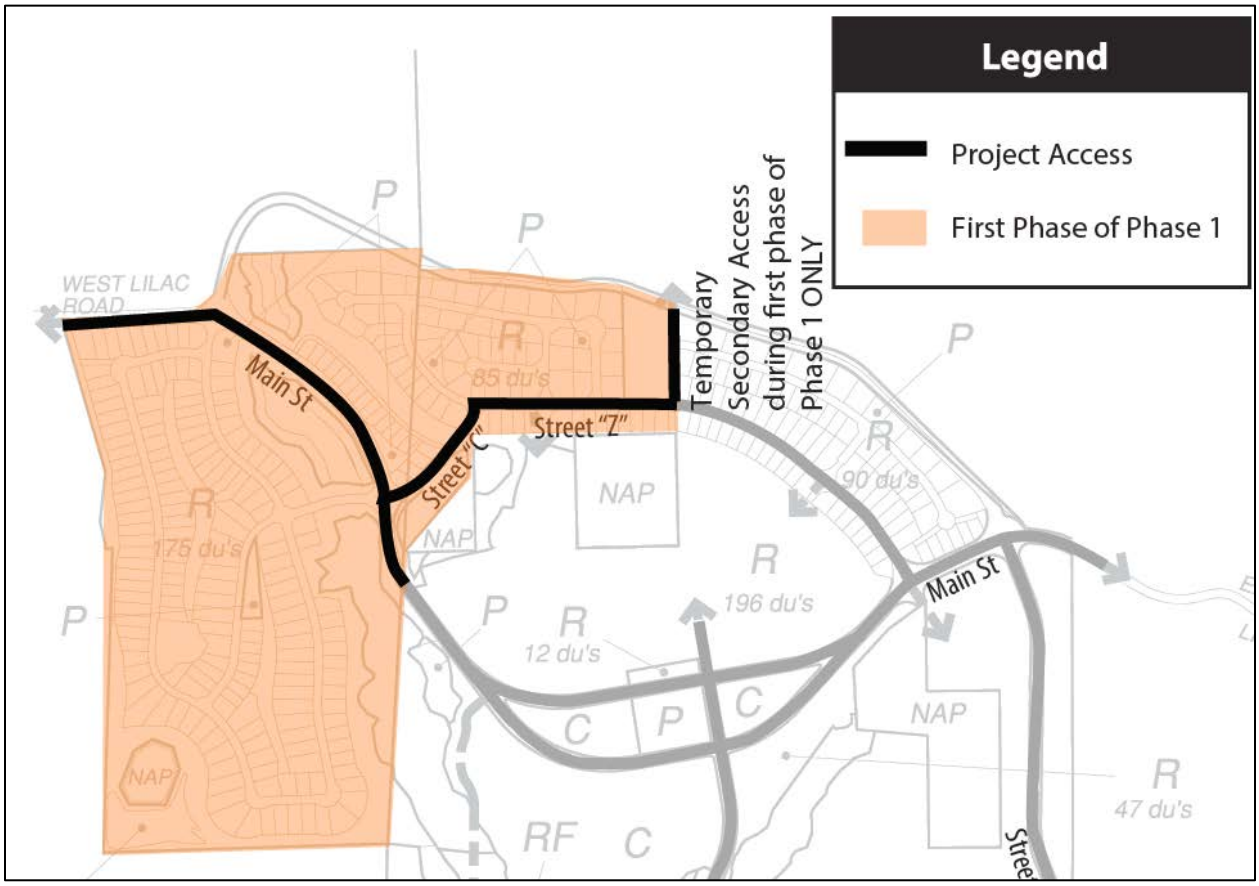
Intersection Operations Assessment

The intersection of Birdsong Drive / W. Lilac Road is currently a one-way stop controlled intersection. The Lilac Hills Ranch development is not proposing to make any changes to the intersection's configuration. **Figure 2** displays the existing geometrics at the Birdsong Drive / W. Lilac Road intersection.

Intersection Level of Service (LOS) and delay analyses were conducted at the Birdsong Drive / W. Lilac Road intersection using the methodologies contained in Chapters 19 and 20 of the HCM 2010. The computerized analysis of intersection operations were performed using the *SYNCHRO 8.0 Build 802* traffic analysis software (by Trafficware).

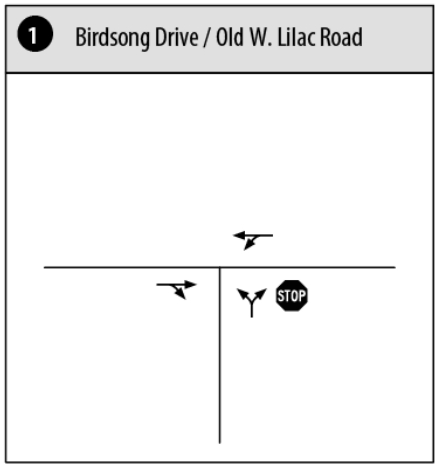
Peak hour turning movement counts for the Birdsong Drive / W. Lilac Road intersection were conducted on October 17, 2013, and are included as **Attachment A**.

FIGURE 1
LILAC HILLS RANCH PROJECT SITE PLAN
FIRST PHASE OF PHASE 1



Source: Chen Ryan Associates, November 2013

FIGURE 2
BIRDSONG DRIVE / W. LILAC ROAD
EXISTING INTERSECTION GEOMETRICS



Source: Chen Ryan Associates, October 2013

Table 1 displays the estimated project trip generation for the first phase of Phase 1 of the Lilac Hills Ranch development. Trip Generation estimates are based on the rates contained in the *SANDAG Not so Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.*

TABLE 1
LILAC HILLS RANCH PROJECT TRIP GENERATION
FIRST PHASE OF PHASE 1

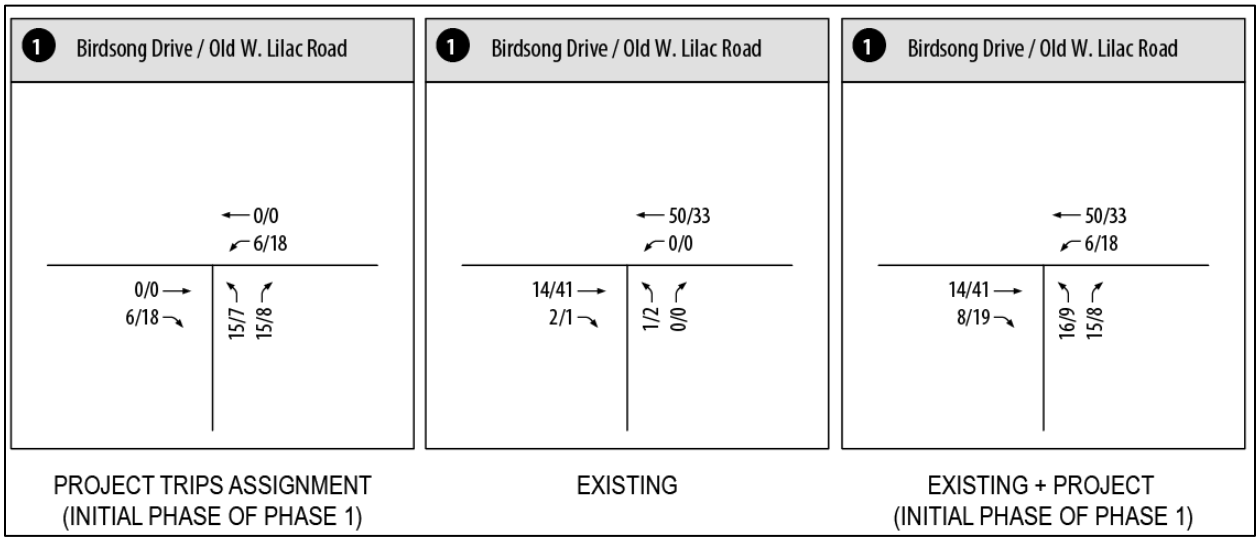
Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	Trips	%	Trips
Single Family	260 DU	10 / DU	2,600	8.0%	208 (62-in / 146-out)	10.0%	260 (182-in / 78-out)

Source: Chen Ryan Associates, November2013

The Existing + Project (Phase A) trip distribution assumptions, documented in Figure 4-3 of the TIS, were utilized to calculate the project trip assignment for the first phase of Phase 1. Project trip distribution assumptions are included in **Attachment B**.

Figure 3 displays the assumed peak hour the first phase of Phase 1 trip assignment, as well as the peak hour traffic volumes for Existing and Existing + Project (the first phase of Phase 1) conditions.

FIGURE 3
BIRDSONG DRIVE / W. LILAC ROAD
PEAK HOUR TRAFFIC VOLUMES



Source: Chen Ryan Associates, November 2013

Table 2 displays a summary of the peak hour intersection LOS analysis results for the Birdsong Drive / W. Lilac Road intersection, under both the Existing and Existing + Project (the first phase of Phase 1) conditions. Peak hour intersection analysis worksheets are included in **Attachment C**.

TABLE 2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (FIRST PHASE OF PHASE 1) CONDITIONS

Intersection	Traffic Control	With Project **the first phase of** Phase 1				Existing		Change in Delay (sec.) AM / PM	Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
Birdsong Drive / W. Lilac Road	OWSC	9.5	A	9.2	A	9.2/9.0	A/A	0.3/0.2	-	No

Source: Chen Ryan Associates, November 2013

Note:
OWSC = One-Way Stop Control

As shown, the intersection of Birdsong Drive / W. Lilac Road is projected to operate at LOS A under Existing + Project (the first phase of Phase 1) conditions, thus no additional impact would be caused to the intersection by the construction of the first phase of Phase 1 of the proposed Lilac Hills Ranch development. Birdsong Drive would be converted into a gated/emergency only access roadway after the completion of the first phase of Phase 1, thus no additional analysis is required for the subsequent project phases.

ATTACHMENT A

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-4360-003 **Day:** Thursday

City: Bonsall **Date:** 10/17/2013

AM

NS/EW Streets:	Bird Song			Bird Song			W Lilac Rd			W Lilac Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0		0					5	0	0	12		17
7:15 AM	1		0					2	0	0	26		29
7:30 AM	0		0					4	1	0	5		10
7:45 AM	0		0					3	1	0	7		11
8:00 AM	1		0					1	0	0	5		7
8:15 AM	0		0					8	0	1	10		19
8:30 AM	0		0					9	1	0	6		16
8:45 AM	0		1					2	1	0	12		16
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	0	1	0	0	0	0	34	4	1	83	0	125
APPROACH %'s :	66.67%	0.00%	33.33%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	89.47%	10.53%	1.19%	98.81%	0.00%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	14	2	0	50	0	67
PEAK HR FACTOR :		0.250			0.000			0.800			0.481		0.578

UTURNS			
NB	SB	EB	WB
NB	SB	EB	WB
0	0	0	0

CONTROL : No Control

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 13-4360-003 **Day:** Thursday

City: Bonsall **Date:** 10/17/2013

PM

NS/EW Streets:	Bird Song			Bird Song			W Lilac Rd			W Lilac Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	1		0					13	0	0	5		19
4:15 PM	0		0					12	0	0	11		23
4:30 PM	0		0					5	0	0	7		12
4:45 PM	1		0					11	1	0	10		23
5:00 PM	0		0					9	0	0	6		15
5:15 PM	0		0					5	0	0	5		10
5:30 PM	0		0					6	0	0	8		14
5:45 PM	0		0					5	0	0	2		7
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	0	0	0	0	0	0	66	1	0	54	0	123
APPROACH %'s :	100.00%	0.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	98.51%	1.49%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	2	0	0	0	0	0	0	41	1	0	33	0	77
PEAK HR FACTOR :	0.500			0.000			0.808			0.750			0.837

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : No Control

ITM Peak Hour Summary

Prepared by:

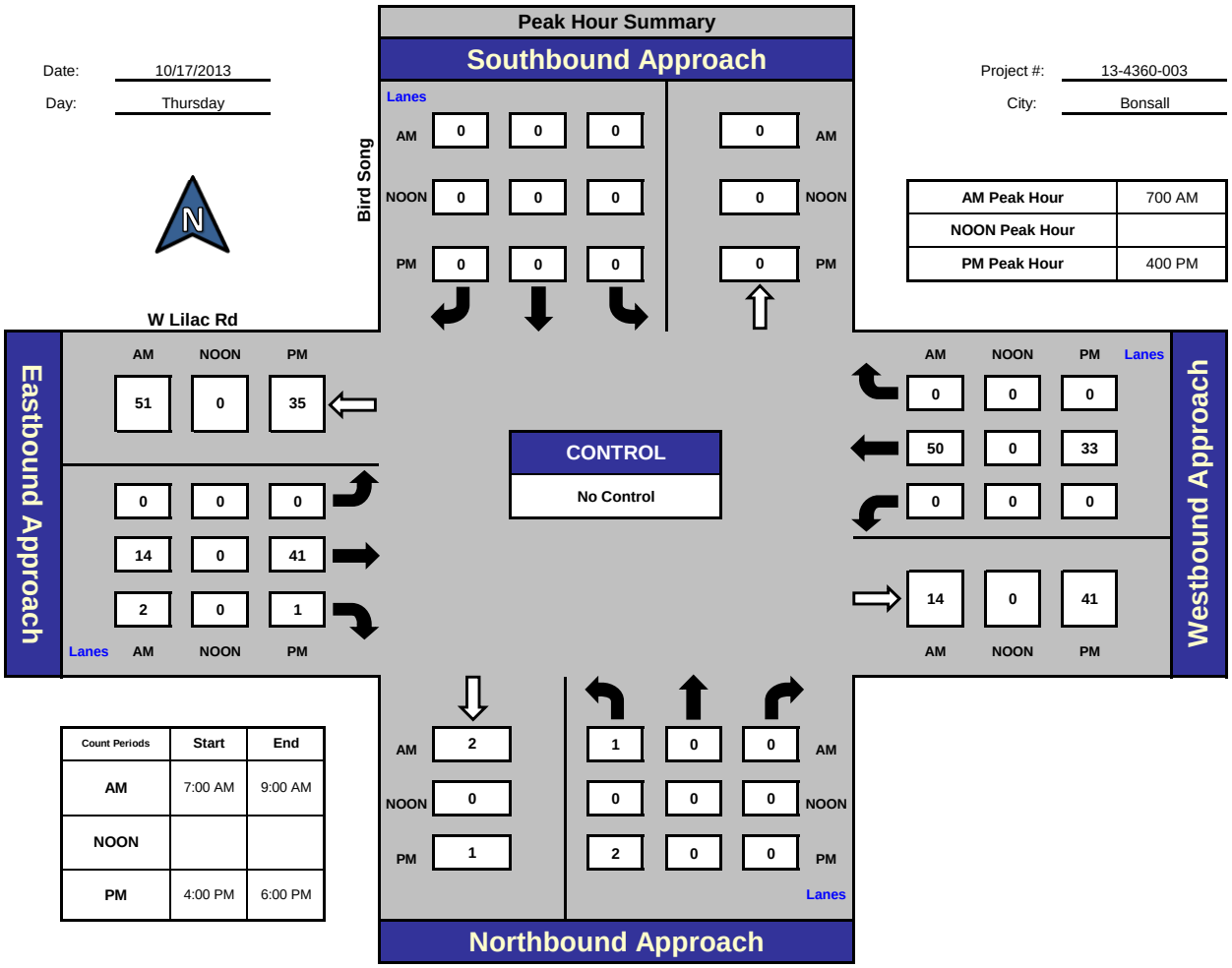
National Data & Surveying Services

Bird Song and W Lilac Rd , Bonsall

Date:	10/17/2013
Day:	Thursday

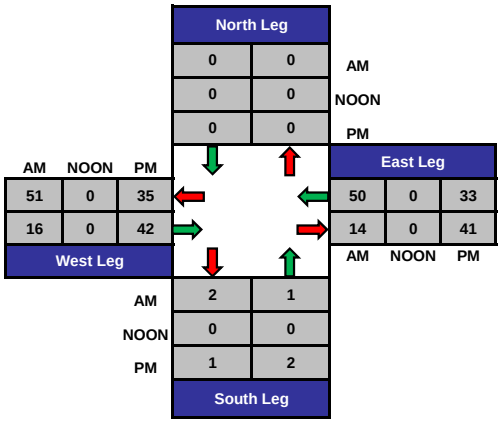
Project #:	13-4360-003
City:	Bonsall

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	400 PM

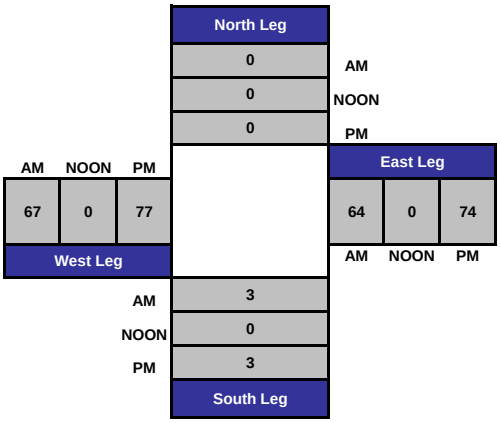


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ATTACHMENT B