

N O R T H E R N C A L I F O R N I A N E T W O R K S T U D Y
0 3 / 0 6 / 2 0 2 0

TRANSPLACE

NORTHERN CALIFORNIA
NETWORK STUDY

AGENDA

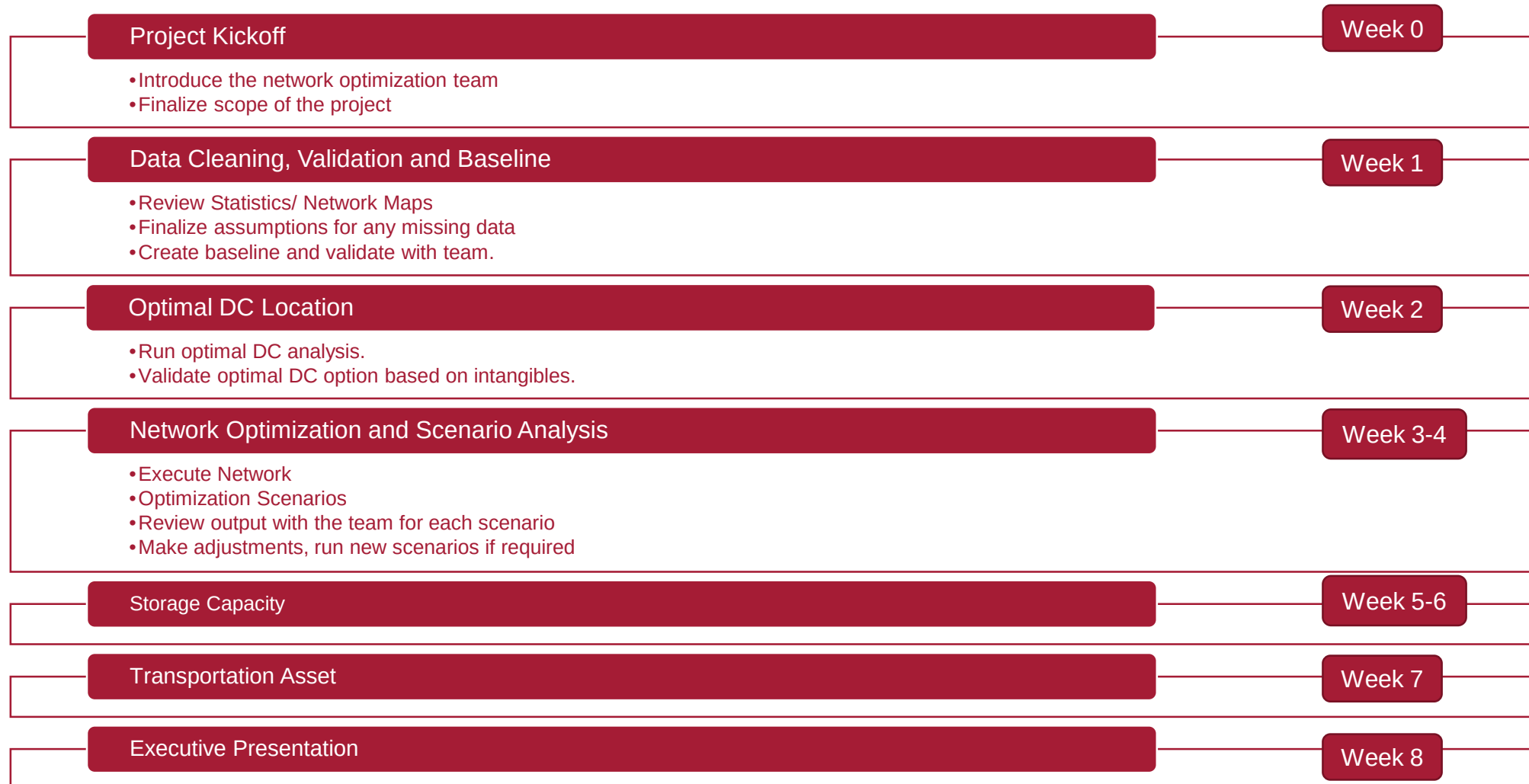
TRANSPLACE

- DATA CLEANING, VALIDATION AND BASELINE
- OPTIMAL DC LOCATION
- INTANGIBLE VARIABLES FOR DC PROPOSED
- NETWORK OPTIMIZATION AND SCENARIO ANALYSIS
- STORAGE CAPACITY
- TRANSPORTATION ASSET

PROJECT OBJECTIVES

- Evaluate Northern California logistics network to improve access to food banks for rural hungers. The specific objectives are listed below:
- Route Optimization
 - Optimal distribution center: to find the optimal distribution center to service all food banks and agencies in the area. The evaluation criteria include:
 - Transportation cost
 - Access to volunteers
 - Stable workforce
 - Proximity to highway system
 - Weather/Access issues
 - Routing: to design optimal routes regarding shipping frequency and shipment size.
- Storage Capacity:
 - To evaluate delivery frequency and size to food banks based on their storage capacity.
- Transportation asset and cost benefit analysis
 - To identify the right truck types, sizes, and quantities.
 - To identify food banks serviced by truck fleet or common carriers.

TIMELINE





NORTHERN CALIFORNIA
NETWORK STUDY

DATA CLEANING, VALIDATION AND BASELINE

COMPARISON 2017 AND 2018

Weight per County

To County	2017		2018	
	Shipments	Weight	Shipments	Weight
Butte	75	1,179,252	91	1,084,698
Shasta	52	695,073	69	715,166
Placer	40	703,267	47	694,596
Yuba/Sutter	45	690,758	59	611,590
Yolo	31	613,093	43	598,285
Humboldt	44	630,542	63	576,117
Lake	32	385,944	54	399,079
Lassen/..	45	385,072	60	361,696
Siskiyou	32	345,373	52	344,247
Mendocino	28	344,490	44	336,767
Tuolumne	40	383,372	55	316,294
Napa	30	339,515	49	297,821
Tehama	24	307,722	41	296,809
Del Norte	34	226,290	42	264,699
Nevada	32	314,008	45	236,229
Calaveras	43	285,941	55	229,244
Amador	37	219,750	46	226,343
Trinity	27	173,036	40	173,426
Grand Total	691	8,222,496	955	7,763,107

- Information received from 2017 and 2018 was arranged to shipment level using the ship date and the destinations.
- Shipments created direct from Sacramento to each food bank.
- Information from 2018 will be used as the baseline for the network optimization analysis.

Weight per Equipment Type

Equipment Type	2017		2018	
	Shipments	Weight	Shipments	Weight
Reefer	281	2,502,318	420	2,226,157
Dry Van	278	3,924,822	348	4,383,743
Compartmental Reefer	112	1,597,877	131	906,549
Frozen	20	197,479	56	246,658
Grand Total	691	8,222,496	955	7,763,107

2018 BASELINE

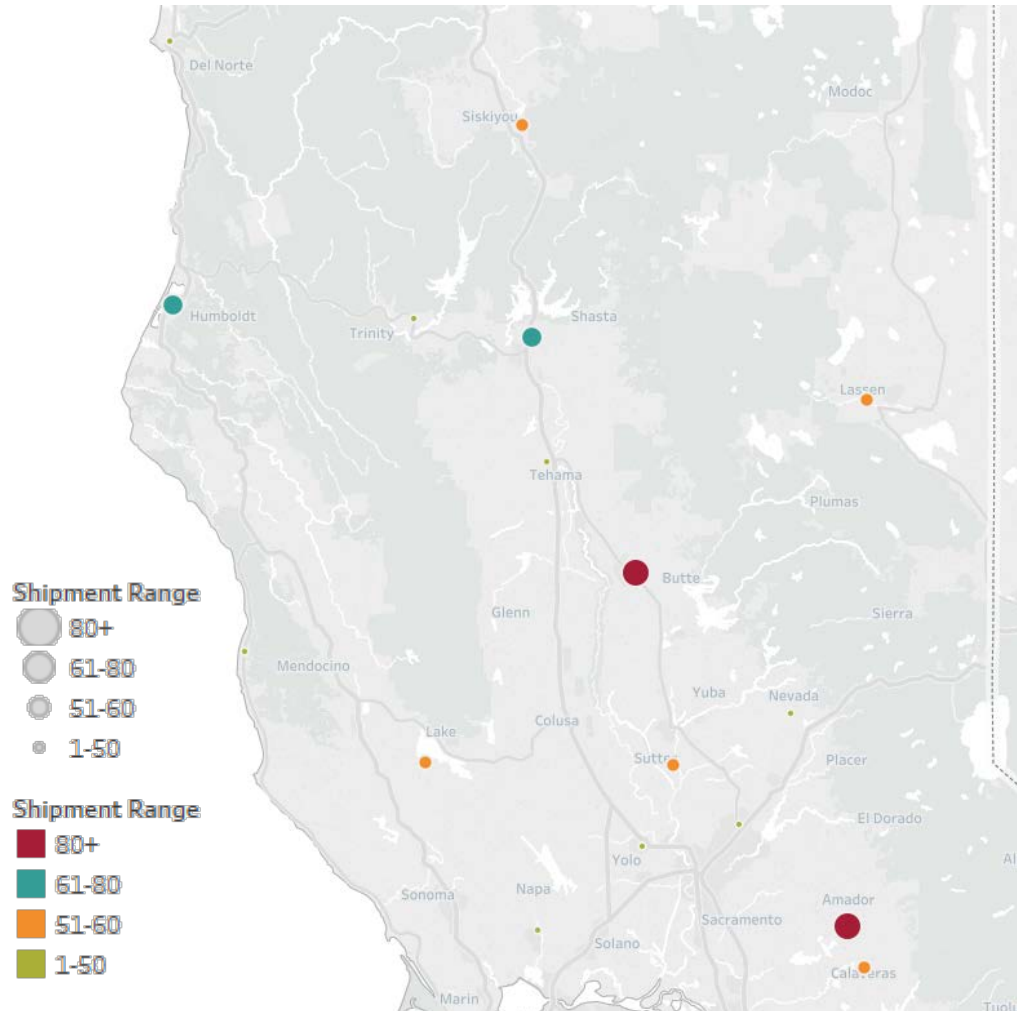
Summary by Destination County

To City	To County	Shipments	Avg. Weight	Weight	Distance
Chico	Butte	91	11,920	1,084,698	18,746
Crescent City	Del Norte	42	6,302	264,699	34,860
Eureka	Humboldt	63	9,145	576,117	41,706
Finley	Lake	54	7,390	399,079	14,580
Fort Bragg	Mendocino	44	7,654	336,767	20,328
Grass Valley	Nevada	45	5,250	236,229	6,030
Jackson	Amador	46	4,920	226,343	4,416
	Tuolumne	55	5,751	316,294	5,280
Napa	Napa	49	6,078	297,821	6,272
Red Bluff	Tehama	41	7,239	296,809	11,726
Redding	Shasta	69	10,365	715,166	24,978
Roseville	Placer	47	14,779	694,596	2,726
San Andreas	Calaveras	55	4,168	229,244	6,490
Susanville	Lassen/..	60	6,028	361,696	30,120
Weaverville	Trinity	40	4,336	173,426	17,440
Weed	Siskiyou	52	6,620	344,247	25,168
Woodland	Yolo	43	13,914	598,285	3,354
Yuba City	Yuba/Sutter	59	10,366	611,590	6,136
Grand Total		955	8,129	7,763,107	280,356

* Distance field is considering total distance round trip.

2018 BASELINE

SHIPMENT LEVEL



- Top destinations by shipments
Chico and Jackson >80 annual shipments.
- 1M lbs. shipped to Chico
- 542K lbs. shipped to Jackson

2018 SACRAMENTO BASELINE COST

SHIPMENT LEVEL

- Baseline cost based on a dedicated fleet model which includes:
 - 5 tractor trailers.
 - A fixed weekly charge by truck.
 - A variable charge per mile.
 - Fuel surcharge based on Transplace FSC.
 - Considering roundtrip miles.

Sacramento 2018 Baseline			
Shipments	Weight	Miles	Baseline Cost
955	7,763,107	280,356	\$966,851

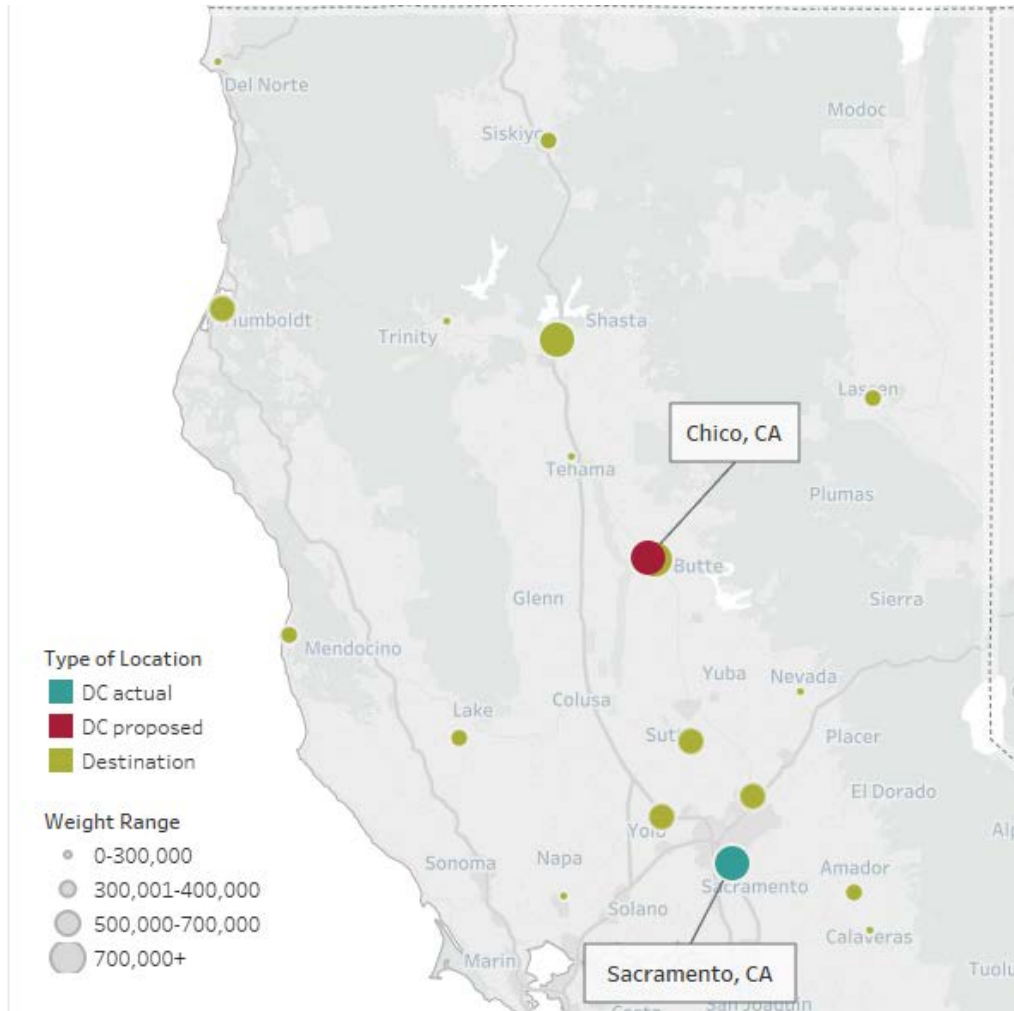


NORTHERN CALIFORNIA
NETWORK STUDY

OPTIMAL DC LOCATION

OPTIMAL DISTRIBUTION CENTER PROPOSED

USING 2018 DATA



- The center of gravity method applied based on weight and distance.
- Proposed city: Chico, CA
- Destination annual volume in Chico: 1,084,698 lb.

OPTIMAL DC PROPOSED

USING 2018 DATA

Distance difference Sacramento and Chico

To City	To County	Shipments	Avg. Weight	Weight	Distance Sacramento	Distance to Chico
Chico	Butte	91	11,920	1,084,698	18,746	364
Crescent City	Del Norte	42	6,302	264,699	34,860	23,604
Eureka	Humboldt	63	9,145	576,117	41,706	27,342
Finley	Lake	54	7,390	399,079	14,580	13,392
Fort Bragg	Mendocino	44	7,654	336,767	20,328	16,808
Grass Valley	Nevada	45	5,250	236,229	6,030	7,470
Jackson	Amador	46	4,920	226,343	4,416	12,696
	Tuolumne	55	5,751	316,294	5,280	15,180
Napa	Napa	49	6,078	297,821	6,272	13,818
Red Bluff	Tehama	41	7,239	296,809	11,726	3,362
Redding	Shasta	69	10,365	715,166	24,978	10,626
Roseville	Placer	47	14,779	694,596	2,726	7,896
San Andreas	Calaveras	55	4,168	229,244	6,490	17,380
Susanville	Lassen/..	60	6,028	361,696	30,120	15,360
Weaverville	Trinity	40	4,336	173,426	17,440	9,120
Weed	Siskiyou	52	6,620	344,247	25,168	14,352
Woodland	Yolo	43	13,914	598,285	3,354	8,686
Yuba City	Yuba/Sutter	59	10,366	611,590	6,136	5,900
Grand Total		955	8,129	7,763,107	280,356	223,356

- Distance fields are considering total distance round trips.
- Chico CA minimize total distance of the network



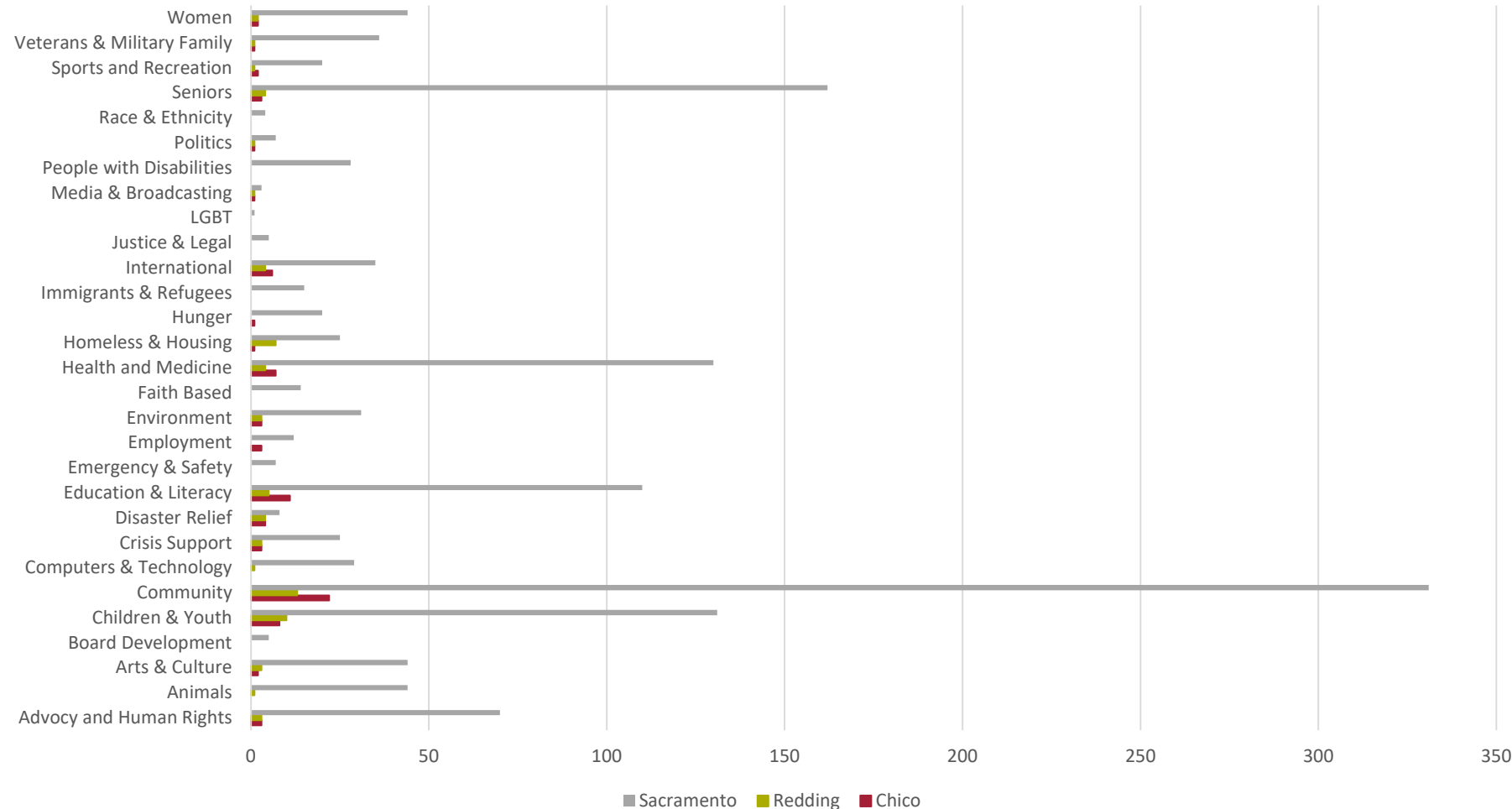
NORTHERN CALIFORNIA
NETWORK STUDY

INTANGIBLE VARIABLES FOR DC PROPOSED

ACCESS TO VOLUNTEERS BY POTENTIAL DC LOCATION

BASED ON VOLUNTEERING OPPORTUNITIES

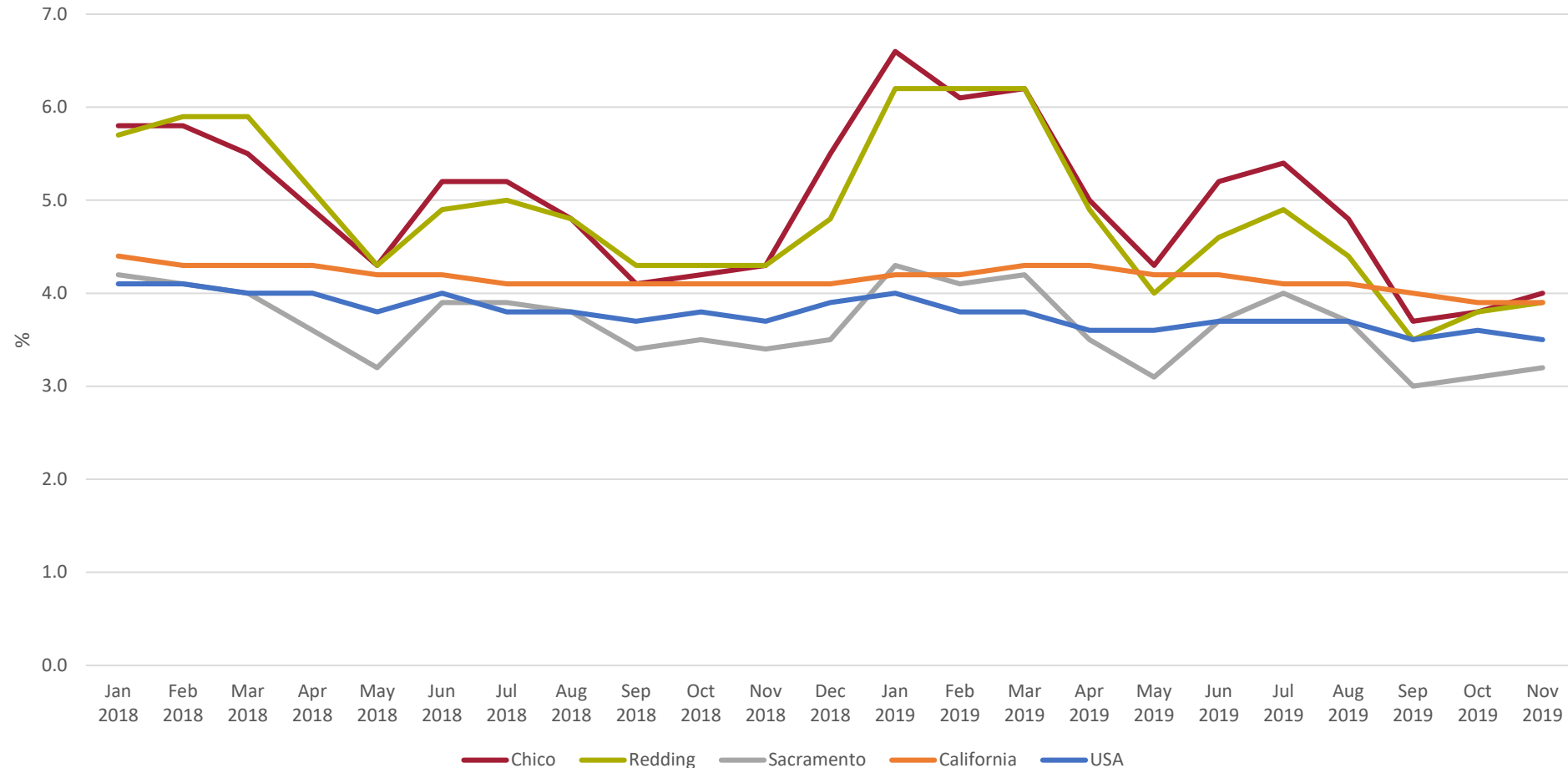
Volunteering Opportunities



- The chart shows the amount of volunteering opportunities found in volunteermatch.org by category.
- Note: information gathered 01/31/2020, opportunities vary in the associations that are registered in the site and the ones that are currently looking for volunteers.
- Overall opportunities: Chico (84), Redding (71), and Sacramento (1,396).

STABLE WORKFORCE BY POTENTIAL DC LOCATION

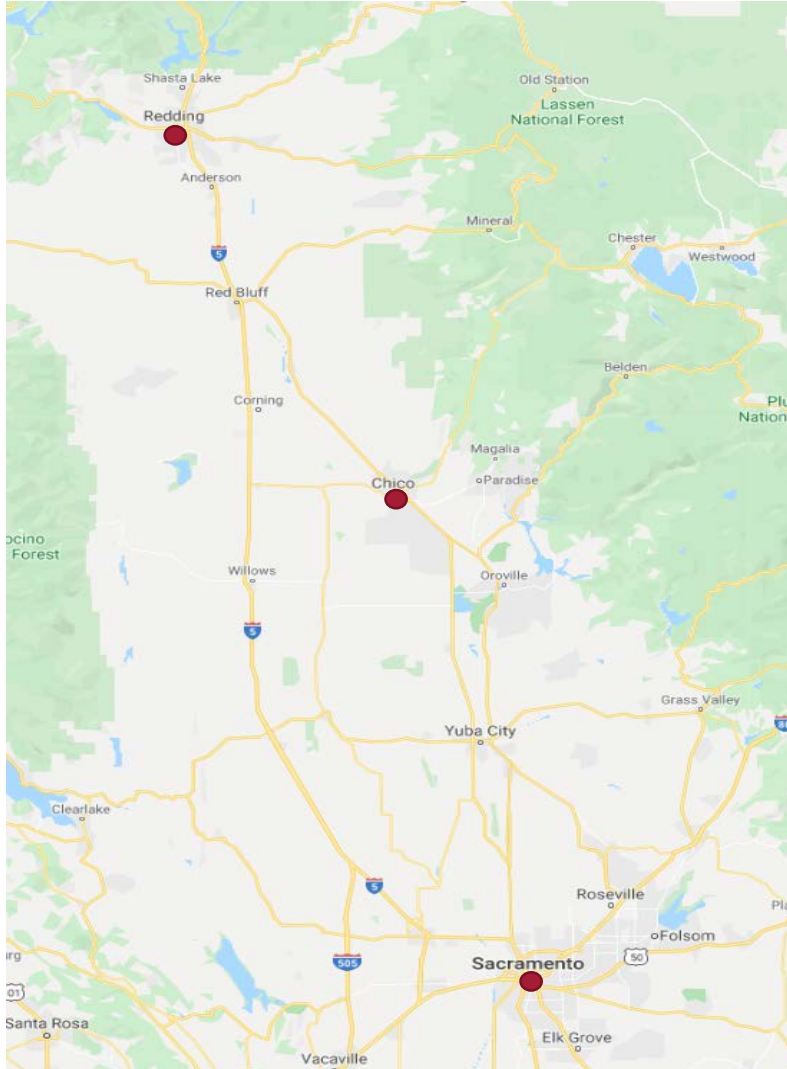
BASED ON UNEMPLOYMENT RATE



- Source: US Bureau of Labor Statistics
- Note: Rates shown are a percentage of the labor force

PROXIMITY TO HIGHWAY SYSTEMS BY POTENTIAL DC LOCATION

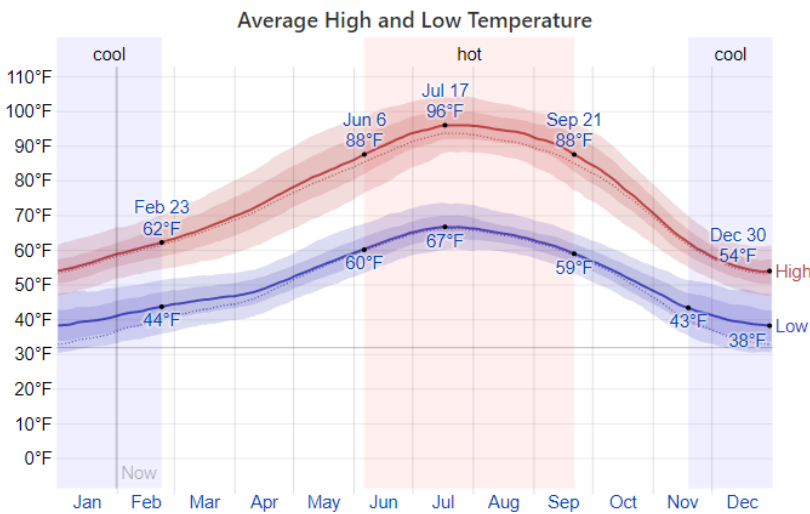
MAP WITH LOCATIONS



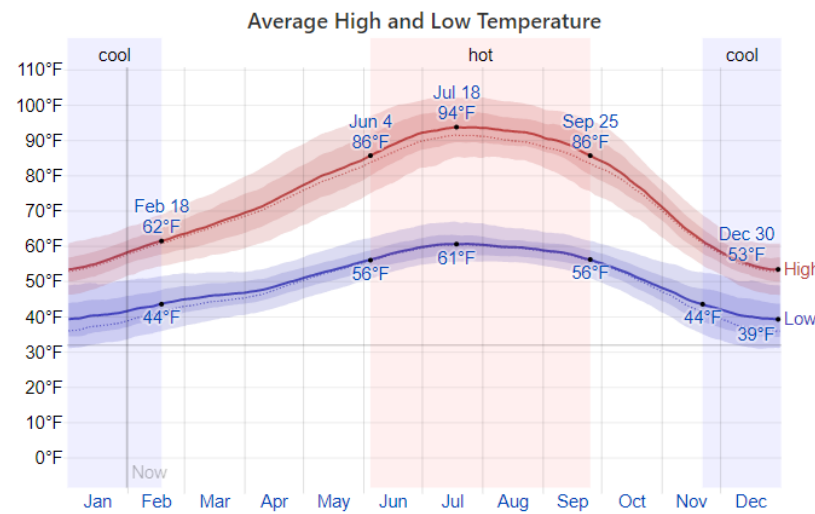
- All proposed DC locations have good access to a highway system.
- Redding and Sacramento access to Interstate 5.
- Chico 35 miles from Interstate 5.

WEATHER ISSUES BY POTENTIAL DC LOCATION

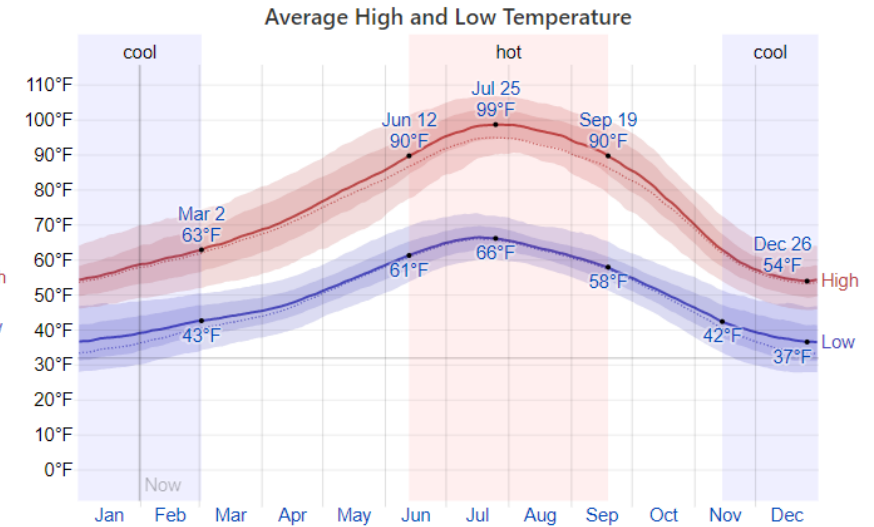
AVERAGE HIGH AND LOW TEMPERATURE



Chico, CA



Sacramento, CA



Redding, CA

- Source: Weather Spark
- <https://weatherspark.com/>

WEATHER ISSUES ANALYZED BY COUNTY

SNOW PROBABILITY IN DESTINATIONS

- For each of the destinations, the probability of snow was researched. The probability was translated to days of the month.
- Based on the results of the next slide, shipments could be scheduled in another day of the week depending of the forecast of snow in the future.
- For the dedicated shipments, routes can be exchanged between each other for weather convenience.
- Colors in the table represent the colors of the route in slide 40.

WEATHER ISSUES ANALYZED BY COUNTY

SNOW PROBABILITY IN DESTINATIONS

County	To City	To ZIP	Probability snow						Days of the month with snow						Route	Weight per Week	
			Nov	Dec	Jan	Feb	Mar	Apr	Nov	Dec	Jan	Feb	Mar	Apr		Dry Van	Comp. Reefer
Butte	Chico	95927	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	RTE_03	22,718	34,482
Del Norte	Crescent City	95531	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	RTE_01	3,542	12,188
Humboldt	Eureka	95501	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0	RTE_01	12,004	19,229
Lake	Finley	95435	0%	1%	1%	1%	0%	0%	0	1	1	1	0	0		8,246	13,146
Mendocino	Fort Bragg	95437	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0		7,786	8,145
Nevada	Grass Valley	95945	0%	1%	1%	0%	0%	0%	0	1	1	0	0	0		5,085	6,509
Amador	Jackson	95642	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0		3,615	9,654
Tuolumne	Jackson	95642	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0		4,883	14,140
Napa	Napa	94558	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0		6,187	9,347
Tehama	Red Bluff	96080	0%	1%	0%	0%	0%	0%	0	1	0	0	0	0	RTE_02	6,881	8,242
Shasta	Redding	96003	0%	1%	1%	0%	0%	0%	0	1	1	0	0	0	RTE_02	16,770	18,373
Placer	Roseville	95678	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0		21,435	8,990
Calaveras	San Andreas	95249	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0		3,556	10,159
Lassen/ Modoc	Susanville	96130	5%	7%	6%	6%	5%	3%	2	3	2	2	2	1	RTE_03	5,191	16,596
Trinity	Weaverville	96093	7%	15%	15%	7%	6%	3%	3	5	5	2	2	1	RTE_01	2,793	6,871
Siskiyou	Weed	96094	7%	9%	10%	7%	7%	4%	3	3	4	2	3	2	RTE_02	5,827	14,302
Yolo	Woodland	95695	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0		17,763	9,405
Yuba/Sutter	Yuba City	95991	0%	0%	0%	0%	0%	0%	0	0	0	0	0	0		14,323	15,412

- Source: Weather Spark
- <https://weatherspark.com/>



NORTHERN CALIFORNIA
NETWORK STUDY

NETWORK OPTIMIZATION AND SCENARIO ANALYSIS

CHICO

BASLINE VS OPTIMIZED

- Projected savings vs baseline = 25%
- Compartmental Reefer are shipments where Frozen and Reefer go in the same truck.
- Miles shown are roundtrip.
- Baseline model with 5 dedicated 53' trucks and optimized model with 3 dedicated 53' trucks.

Chico Scenario							
Baseline Mode	Baseline Equipment Type	Single Stop Shipments	Single Stop Miles	Final Mode	Final Equipment Type	Final Shipments	Final Miles
Truck	Compartmental Reefer	26	3,730	MSTL	Compartmental Reefer	13	2,652
Truck	Compartmental Reefer	118	29,484	Truck	Compartmental Reefer	118	29,484
Truck	Dry Van	10	1,458	MSTL	Dry Van	5	1,102
Truck	Dry Van	338	78,794	Truck	Dry Van	338	78,794
Truck	Frozen	2	302	MSTL	Frozen	1	194
Truck	Frozen	46	10,826	Truck	Frozen	46	10,826
Truck	Reefer	42	6,180	MSTL	Reefer	21	4,434
Truck	Reefer	361	91,200	Truck	Reefer	361	91,200
Truck	Compartmental Reefer	12	1,382	MSTL	Compartmental Reefer	6	1,071
Total		955	223,356			909	219,757

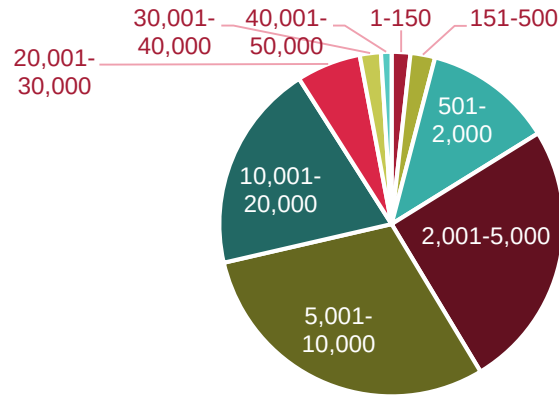
Baseline – Sacramento CA				
Description	Volume	Rate	Total	Trucks
Fixed Weekly Charge	52 Weeks	\$3,078	\$160,059	5
Variable Mileage Rate	280,356	\$2.568	\$719,882	
Total			\$879,941	
Fuel	280,356	\$0.31	\$86,910	
Grand Total			\$966,851	

Optimized – Chico CA				
Description	Volume	Rate	Total	Trucks
Fixed Weekly Charge	52 Weeks	\$1,847	\$96,035	3
Variable Mileage Rate	219,757	\$2.568	\$564,279	
Total			\$660,315	
Fuel	219,757	\$0.31	\$68,125	
Intermediate Stop Cost	46	\$30	\$1,380	
Grand Total			\$729,819	

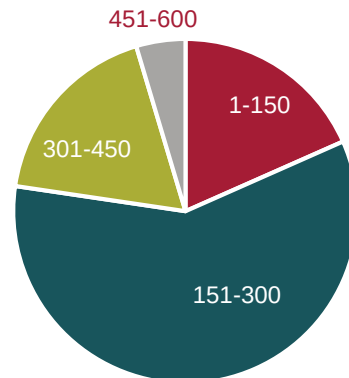
CHICO

SUMMARY

Weight Break	
Weight Break	Final Shipments
1-150	16
151-500	21
501-2,000	110
2,001-5,000	229
5,001-10,000	273
10,001-20,000	178
20,001-30,000	55
30,001-40,000	18
40,001-50,000	9
Total	909



Mileage Break	
Mileage Break	Final Shipments
1-150	167
151-300	536
301-450	164
451-600	42
Total	909



Avg Weight per Equipment Type			
Final Equipment Type	Flow	Final Shipments	Average Weight
Reefer	Truck	361	5,433
Dry Van	Truck	338	12,640
Compartmental Reefer	Truck	118	6,666
Frozen	Truck	46	4,001
Reefer	MSTL	21	8,945
Compartmental Reefer	MSTL	19	13,007
Dry Van	MSTL	5	22,288
Frozen	MSTL	1	12,445
Total		909	85,424

- *Potential opportunity to switch from dedicated model to OTR carriers [LTL] based on avg shipments weight

CHICO

LAYOVER LANES

- Shipments on lanes with LOH >500 miles roundtrip might not be feasible to return DC on the same day.

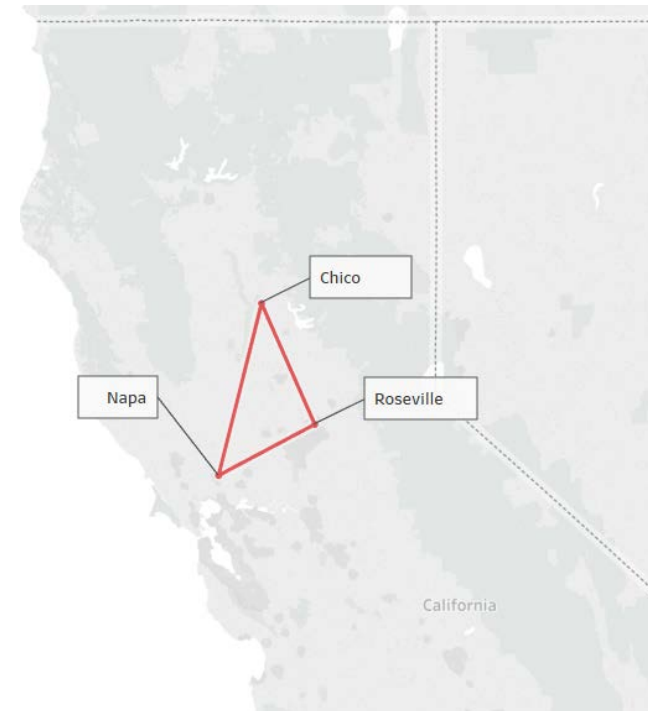
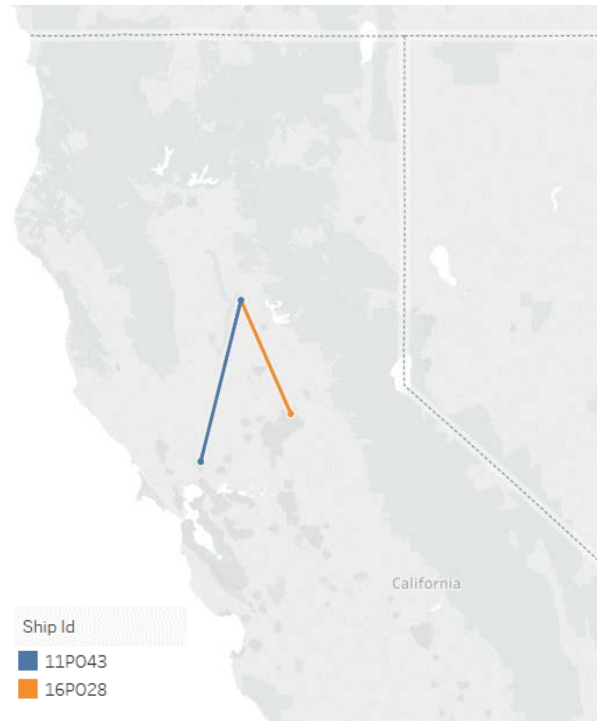
Chico Layover Lanes (distance >=500 miles)									
Shipments	OCITY	OSTATE	FROMZIP	DCITY	DSTATE	TOZIP	Final Mode	Final Equipment Type	Final Miles
10	Chico	CA	95926	Crescent City	CA	95531	Truck	Compartmental Reefer	562
15	Chico	CA	95926	Crescent City	CA	95531	Truck	Dry Van	562
2	Chico	CA	95926	Crescent City	CA	95531	Truck	Frozen	562
15	Chico	CA	95926	Crescent City	CA	95531	Truck	Reefer	562

OPTIMAL ROUTING EXAMPLE

CHICO, CA

- 2 historical shipments previously shipped separately in 2 trucks from DC to each food bank, now are modeled to be shipped together from DC to each food bank in a multi-stop truck.

Route ID	Shipment ID	Weight	From	To City	Equipment Type	Final Equipment Type	Sequence
07122018_RTE_11020	16PO28	4,006	Chico, CA	Roseville, CA	Frozen	Compartmental Reefer	1
07122018_RTE_11020	16PO28	2,100	Chico, CA	Roseville, CA	Reefer	Compartmental Reefer	1
07122018_RTE_11020	11PO43	840	Chico, CA	Napa, CA	Reefer	Compartmental Reefer	2



SACRAMENTO

BASLINE VS OPTIMIZED

- Projected savings vs baseline = 7%
- Compartmental Reefer are shipments where Frozen and Reefer can go in the same truck.
- Miles shown are roundtrip.
- Baseline model with 5 dedicated 53' trucks and optimized model with 3 dedicated 53' trucks.

Sacramento Scenario							
Baseline Mode	Baseline Equipment Type	Baseline Shipments	Baseline Miles	Final Mode	Final Equipment Type	Final Shipments	Final Miles
Truck	Compartmental Reefer	18	1,728	MSTL	Compartmental Reefer	9	891
Truck	Compartmental Reefer	119	39,086	Truck	Compartmental Reefer	119	39,086
Truck	Dry Van	26	2,496	MSTL	Dry Van	13	1,287
Truck	Dry Van	322	99,978	Truck	Dry Van	322	99,978
Truck	Frozen	2	192	MSTL	Frozen	1	99
Truck	Frozen	53	15,640	Truck	Frozen	53	15,640
Truck	Reefer	14	1,344	MSTL	Reefer	7	693
Truck	Reefer	401	119,892	Truck	Reefer	401	119,892
Total		955	280,356			925	277,566

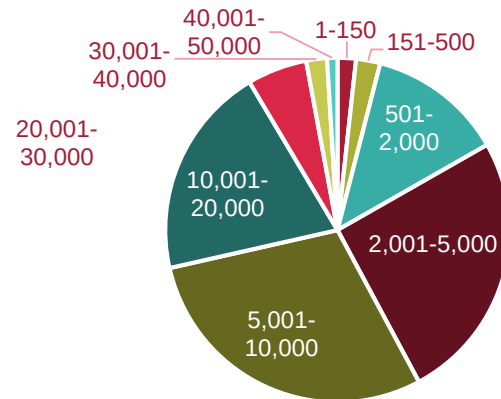
Baseline – Sacramento CA				
Description	Volume	Rate	Total	Trucks
Fixed Weekly Charge	52 Weeks	\$3,078	\$160,059	5
Variable Mileage Rate	280,356	\$2.568	\$719,882	
Total			\$879,941	
Fuel	280,356	\$0.31	\$86,910	
Grand Total			\$966,851	

Optimized – Sacramento CA				
Description	Volume	Rate	Total	Trucks
Fixed Weekly Charge	52 Weeks	\$1,847	\$96,035	3
Variable Mileage Rate	277,566	\$2.568	\$712,718	
Total			\$808,753	
Fuel	277,566	\$0.31	\$86,045	
Intermediate Stop Cost	60	\$30	\$1,800	
Grand Total			\$896,599	

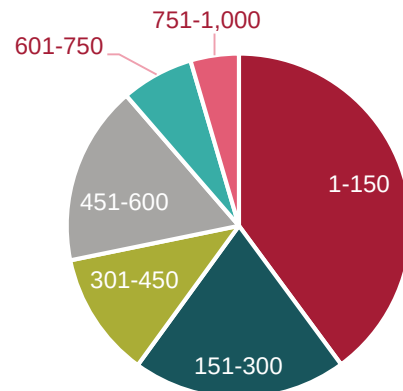
SACRAMENTO

SUMMARY

Weight Break	
Weight Break	Final Shipments
1-150	16
151-500	21
501-2,000	118
2,001-5,000	235
5,001-10,000	271
10,001-20,000	185
20,001-30,000	52
30,001-40,000	18
40,001-50,000	9
Total	925



Mileage Break	
Mileage Break	Final Shipments
1-150	369
151-300	186
301-450	109
451-600	156
601-750	63
751-1,000	42
Total	925



Avg Weight per Equipment Type			
Final Equipment Type	Flow	Final Shipments	Average Weight
Reefer	Direct	401	5,348
Dry Van	Direct	322	12,981
Compartmental Reefer	Direct	119	6,979
Frozen	Direct	53	4,565
Dry Van	MSTL	13	15,684
Compartmental Reefer	MSTL	9	11,964
Reefer	MSTL	7	7,436
Frozen	MSTL	1	2,627
Total		925	67,585

- *Potential opportunity to switch from dedicated model to OTR carriers [LTL] based on avg shipments weight.

SACRAMENTO

LAYOVER LANES

- Shipments on lanes with LOH >500 miles roundtrip might not be feasible to return DC on the same day.

Sacramento Layover Lanes (distance >=500 miles)									
Shipments	From City	From State	From ZIP	To City	To State	To ZIP	Final Mode	Final Equipment Type	Final Miles
10	Sacramento	CA	95828	Crescent City	CA	95531	Truck	Compartmental Reefer	830
15	Sacramento	CA	95828	Crescent City	CA	95531	Truck	Dry Van	830
2	Sacramento	CA	95828	Crescent City	CA	95531	Truck	Frozen	830
15	Sacramento	CA	95828	Crescent City	CA	95531	Truck	Reefer	830
3	Sacramento	CA	95828	Eureka	CA	95501	Truck	Compartmental Reefer	662
23	Sacramento	CA	95828	Eureka	CA	95501	Truck	Dry Van	662
4	Sacramento	CA	95828	Eureka	CA	95501	Truck	Frozen	662
33	Sacramento	CA	95828	Eureka	CA	95501	Truck	Reefer	662
9	Sacramento	CA	95828	Susanville	CA	96130	Truck	Compartmental Reefer	502
23	Sacramento	CA	95828	Susanville	CA	96130	Truck	Dry Van	502
2	Sacramento	CA	95828	Susanville	CA	96130	Truck	Frozen	502
26	Sacramento	CA	95828	Susanville	CA	96130	Truck	Reefer	502

REDDING

BASLINE VS OPTIMIZED

- Projected savings vs baseline = 12%
- Compartmental Reefer are shipments where Frozen and Reefer go in the same truck.
- Miles shown are roundtrip.
- Baseline model with 5 dedicated 53' trucks and optimized model with 3 dedicated 53' trucks.

Redding Scenario							
Baseline Mode	Baseline Equipment Type	Single Stop Shipments	Single Stop Miles	Final Mode	Final Equipment Type	Final Shipments	Final Miles
Truck	Compartmental Reefer	8	558	MSTL	Compartmental Reefer	4	520
Truck	Compartmental Reefer	127	36,326	Truck	Compartmental Reefer	127	36,326
Truck	Dry Van	348	94,582	Truck	Dry Van	348	94,582
Truck	Frozen	56	14,408	Truck	Frozen	56	14,408
Truck	Reefer	2	174	MSTL	Reefer	1	163
Truck	Reefer	414	117,578	Truck	Reefer	414	117,578
Total		955	263,626			950	263,577

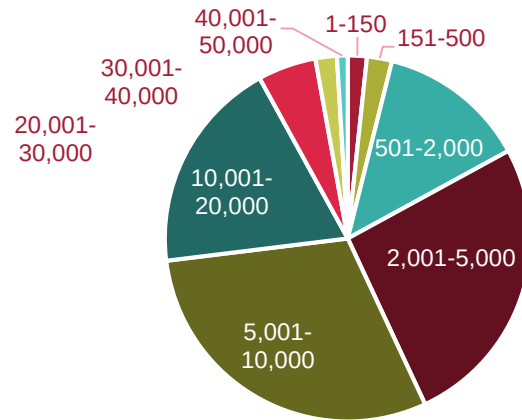
Baseline – Sacramento CA				
Description	Volume	Rate	Total	Trucks
Fixed Weekly Charge	52 Weeks	\$3,078	\$160,059	5
Variable Mileage Rate	280,356	\$2.568	\$719,882	
Total			\$879,941	
Fuel	280,356	\$0.31	\$86,910	
Grand Total			\$966,851	

Optimized – Redding CA				
Description	Volume	Rate	Total	Trucks
Fixed Weekly Charge	52 Weeks	\$1,847	\$96,035	3
Variable Mileage Rate	263,577	\$2.568	\$676,798	
Total			\$772,833	
Fuel	263,577	\$0.31	\$81,709	
Intermediate Stop Cost	5	\$30	\$150	
Grand Total			\$854,692	

REDDING

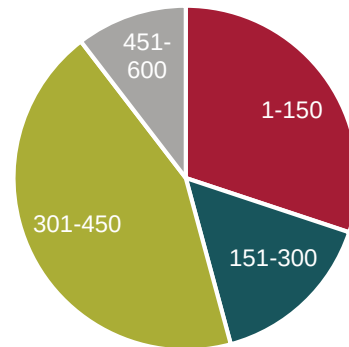
SUMMARY

Weight Break	
Weight Break	Final Shipments
1-150	16
151-500	21
501-2,000	125
2,001-5,000	247
5,001-10,000	285
10,001-20,000	180
20,001-30,000	49
30,001-40,000	18
40,001-50,000	9
Total	950



Avg Weight per Equipment Type			
Final Equipment Type	Flow	Final Shipments	Average Weight
Reefer	Truck	414	5,301
Dry Van	Truck	348	12,597
Compartmental Reefer	Truck	127	6,988
Frozen	Truck	56	4,405
Compartmental Reefer	MSTL	4	8,778
Reefer	MSTL	1	15,677
Total		950	53,745

Mileage Break	
Mileage Break	Final Shipments
1-150	286
151-300	149
301-450	416
451-600	99
Total	950



- *Potential opportunity to switch from dedicated model to OTR carriers [LTL] based on avg shipments weight.



NORTHERN CALIFORNIA
NETWORK STUDY

STORAGE CAPACITY

DC STORAGE CAPACITY BY WEIGHT/CUBE DEMAND

- Assuming that the weight will be equally distributed by week. Each location will get one delivery of dry and one compartmental reefer weekly
- Based on estimate of volume increase projected by equipment type.
 - Dry Van 2 times higher than 2018
 - Frozen 2 times higher than 2018
 - Reefer 4 times higher than 2018
- Storage capacity required at least 39K cft as weekly outbound volume.
- Inbound volume not known with the data received for this project.
- Storage capacity of the DC might be higher than the estimated from the outbound volume perspective.

lbs. per cubic foot per LTL Class	
Freight Density (in lbs. per cubic foot)	Freight Class
Less than 1	400
1 but less than 2	300
2 but less than 4	250
4 but less than 6	175
6 but less than 8	125
8 but less than 10	100
10 but less than 12	92.5
12 but less than 15	85
15 but less than 22.5	70
22.5 but less than 30	65
Over 30	60

Equipment Type	LTL Class	2018 Baseline Weight			Future State Weight		
		Weight	Weight per Week	Cubic foot needed	Weight	Weight per Week	Cubic foot needed
Dry Van	70	4,383,743	84,303	5,620	8,767,487	168,606	11,240
Frozen	70	643,829	12,381	825	1,287,657	24,763	1,651
Reefer	100	2,735,535	52,606	6,576	10,942,141	210,426	26,303
Total		7,763,107	149,291	13,021	20,997,285	403,794	39,194



NORTHERN CALIFORNIA
NETWORK STUDY

TRANSPORTATION ASSET

CONSOLIDATION ANALYSIS 2018 VOLUME

- Compartmental Reefer weekly shipments before consolidation=18
- Compartmental Reefer weekly shipments after consolidation=5

- Dry Van weekly shipments before consolidation=18
- Dry Van weekly shipments after consolidation=5

							OTR Cost	Dedicated COST				Final Cost	
Shipment ID	Equipment Type	Lane	Intermediate Stops	Weight per Week	Roundtrip Route Miles	Total Hours in Trip	OTR Total Cost	Variable cost per Mile	Stop Cost Dedicated	Fixed Dedicated Cost	Total Dedicated Cost	Total Cost	Dedicated/ OTR
RTE_03	Dry Van	Chico, CA to Susanville, CA	1	13,955	204	6.7	\$656	\$587	\$30	\$96	\$713	\$713	Dedicated
RTE_02	Dry Van	Chico, CA to Weed, CA	2	14,739	285	9.2	\$827	\$820	\$60	\$132	\$1,012	\$1,012	Dedicated
RTE_05	Dry Van	Chico, CA to Grass Valley, CA	5	26,448	336	13.1	\$2,027	\$967	\$150	\$188	\$1,305	\$1,305	Dedicated
RTE_04	Dry Van	Chico, CA to Woodland, CA	3	19,991	488	13.9	\$2,336	\$1,404	\$90	\$199	\$1,694	\$1,694	Dedicated
RTE_01	Dry Van	Chico, CA to Crescent City, CA	2	9,169	588	14.7	\$1,171	\$1,692	\$60	\$0	\$0	\$1,171	TL OTR
RTE_13	Comp. Reefer	Chico, CA to Susanville, CA	1	13,861	204	6.7	\$600	\$587	\$30	\$96	\$713	\$713	Dedicated
RTE_12	Comp. Reefer	Chico, CA to Weed, CA	2	11,342	285	9.2	\$865	\$820	\$60	\$132	\$1,012	\$1,012	Dedicated
RTE_15	Comp. Reefer	Chico, CA to Grass Valley, CA	5	18,056	336	13.1	\$2,003	\$967	\$150	\$188	\$1,305	\$1,305	Dedicated
RTE_14	Comp. Reefer	Chico, CA to Woodland, CA	3	11,393	488	13.9	\$2,624	\$1,404	\$90	\$199	\$1,694	\$1,694	Dedicated
RTE_11	Comp. Reefer	Chico, CA to Crescent City, CA	2	10,335	588	14.7	\$1,460	\$1,692	\$60	\$0	\$0	\$1,460	TL OTR
Weekly Total			25	149,289	3,802	115	\$14,570	\$10,941	\$780	\$1,231	\$9,448	\$12,080	

*Total hours includes one hour for drop-off, one for pickup and the average driving hours assuming 55 mph

*Max driving hours permitted per day =10.

CONSOLIDATION ANALYSIS 2018 VOLUME

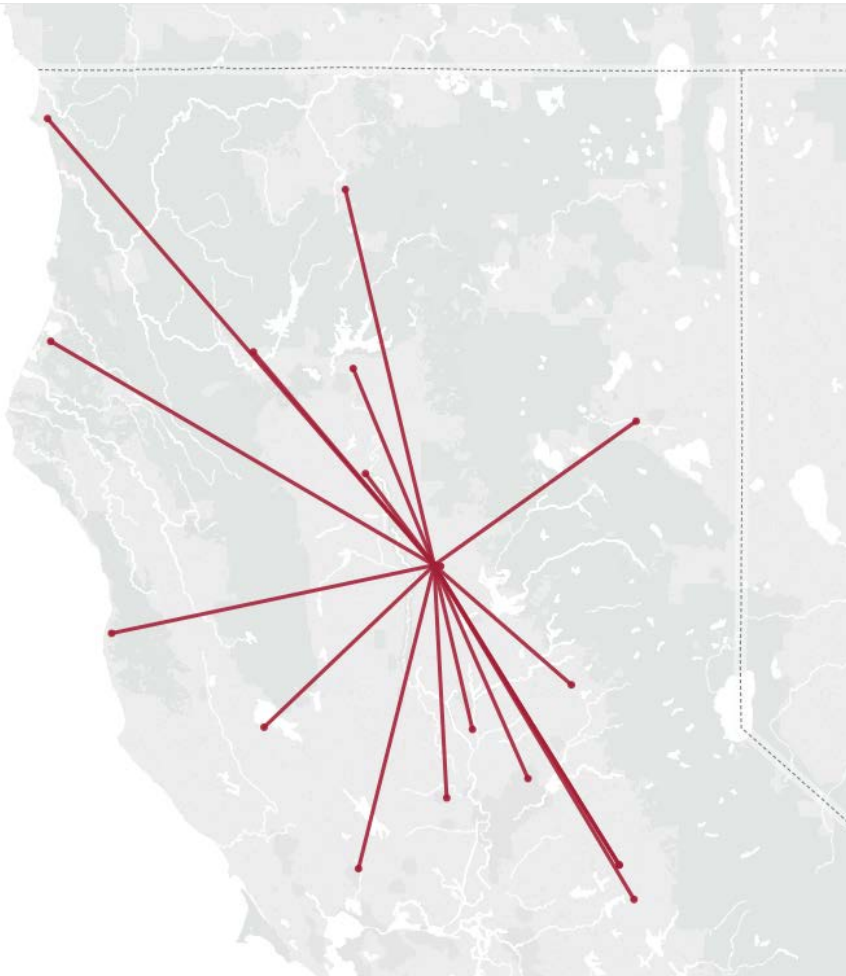
- Compartmental Reefer weekly shipments before consolidation=18
- Compartmental Reefer weekly shipments after consolidation=5
- Dry Van weekly shipments before consolidation=18
- Dry Van weekly shipments after consolidation=5
- The mixed analysis uses two dedicated trucks per week , one dry van and one compartmental reefer (reefer and frozen fit together)
- The remaining shipments were sent OTR (one dry van and the one compartmental reefer).
- Annual Total Cost includes the cost of the OTR and the dedicated shipments, assuming the volume will be the same for each week of the year.

Chico CA network optimization dedicated model proposal				
Description	Volume	Rate	Total	Trucks
Fixed Weekly Charge	52 Weeks	\$1,847	\$96,035	3
Variable Mileage Rate	219,757	\$2.568	\$564,279	
Total			\$660,315	
Fuel	219,757	\$0.31	\$68,125	
Intermediate Stop Cost	46	\$30	\$1,380	
Grand Total			\$729,819	

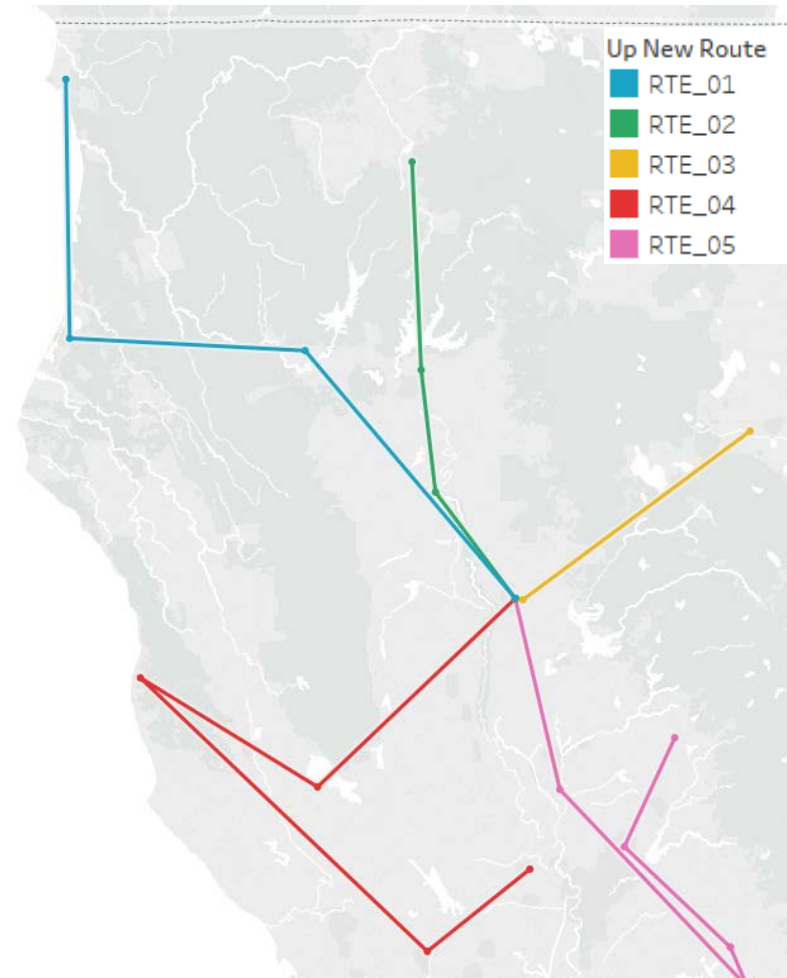
Chico CA network optimization mixed dedicated/OTR model proposal		
Description	Dry Van	Comp. Reefer
Amount of Dedicated Trucks	1	1
Dedicated Weekly Fixed Cost per unit	\$615.61	\$615.61
Amount Dedicated Weekly Shipments	4	4
Amount OTR Weekly Shipments	1	1
Total OTR Weekly Cost	\$1,171	\$1,460
Total Dedicated Weekly Cost	\$4,724	\$4,724
Total Weekly Cost	\$5,895	\$6,184
Annual Total Cost	\$628,140	

DRY VAN SHIPMENTS BEFORE WEIGHT INCREASE AND AFTER CONSOLIDATION

18 ROUTES



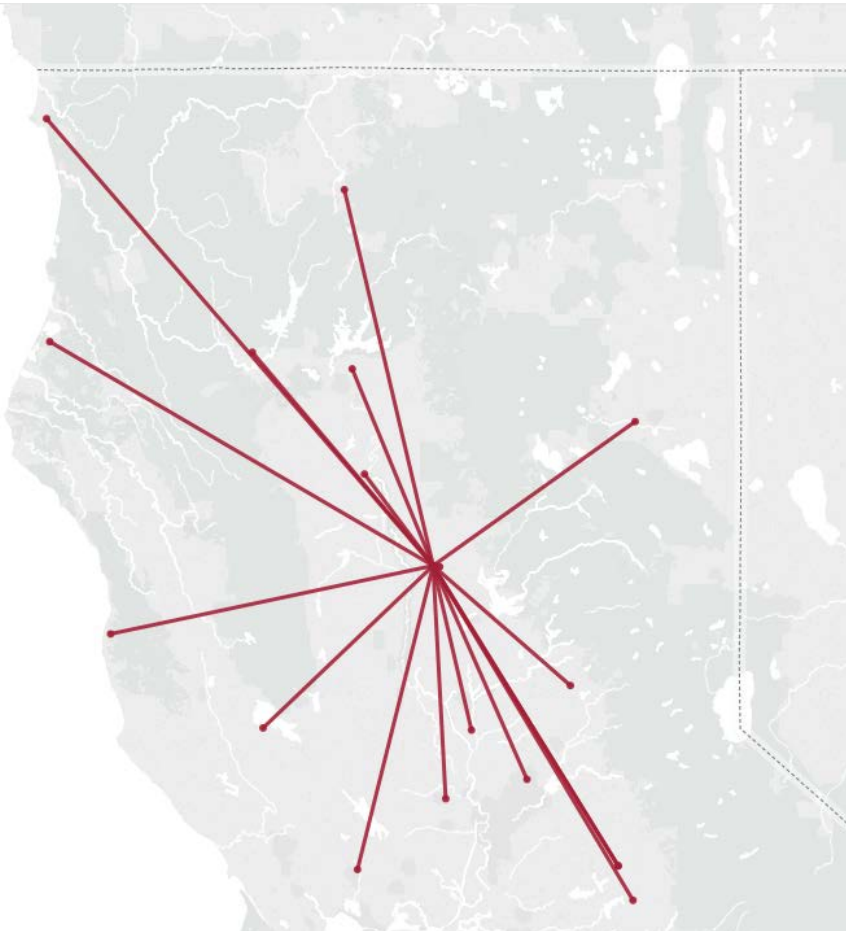
5 ROUTES



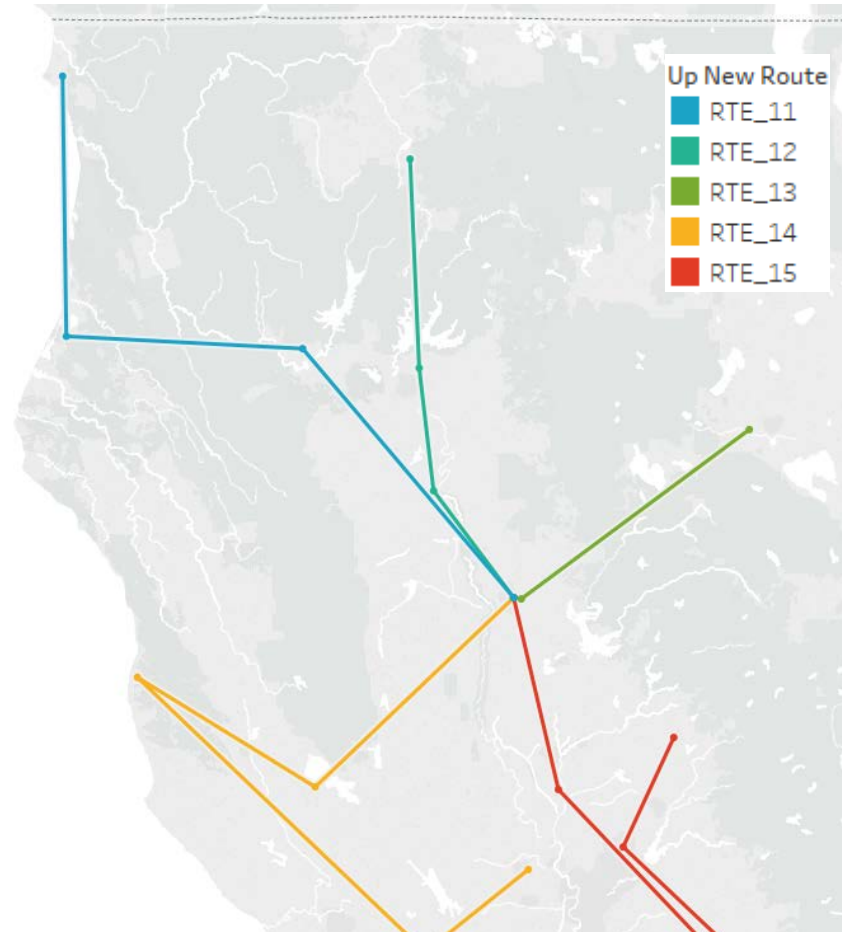
- The map on the left represents a shipment per week to each of the destination's food banks direct.
- The map on the right represents a routing model with multi-drop shipments. These routes will be static and repeated each week.

REEFER SHIPMENTS BEFORE WEIGHT INCREASE AND AFTER CONSOLIDATION

18 ROUTES



5 ROUTES



- The map on the left represents a shipment per week to each of the destination's food banks direct.
- The map on the right represents a routing model with multi-drop shipments. These routes will be static and repeated each week.

CONSOLIDATION ANALYSIS FUTURE VOLUME

- Compartmental Reefer weekly shipments before consolidation=18
- Compartmental Reefer weekly shipments after consolidation=8

- Dry Van shipments weekly before consolidation=18
- Dry Van shipments weekly after consolidation=6

							OTR Cost	Dedicated COST				Final Cost	
Shipment ID	Equipment Type	Lane	Intermediate Stops	Weight per Week	Roundtrip Route Miles	Total Hours in Trip *	OTR Total Cost	Variable cost per Mile	Stop Cost Dedicated	Fixed Dedicated Cost	Total Dedicated Cost	Total Cost	Dedicated/ OTR
RTE_03	Dry Van	Chico, CA to Susanville, CA	1	27,910	204	6.7	\$1,164.36	\$587	\$30	\$87	\$704	\$704	Dedicated
RTE_06	Dry Van	Chico, CA to Napa, CA	1	23,950	277	8.0	\$1,164	\$797	\$30	\$104	\$931	\$931	Dedicated
RTE_02	Dry Van	Chico, CA to Weed, CA	2	29,478	285	9.2	\$1,395	\$820	\$60	\$119	\$999	\$999	Dedicated
RTE_05	Dry Van	Chico, CA to San Andreas, CA	4	38,574	336	12.1	\$1,486	\$967	\$120	\$157	\$1,244	\$1,244	Dedicated
RTE_04	Dry Van	Chico, CA to Fort Bragg, CA	2	30,355	407	11.4	\$1,428	\$1,171	\$60	\$148	\$1,379	\$1,379	Dedicated
RTE_01	Dry Van	Chico, CA to Crescent City, CA	2	18,339	588	14.7	\$1,914	\$1,692	\$60	\$0	\$0	\$1,914	TL OTR
RTE_13	Comp. Reefer	Chico, CA to Chico, CA	0	34,482	4	2.2	\$781	\$12	\$0	\$29	\$40	\$40	Dedicated
RTE_15	Comp. Reefer	Chico, CA to Grass Valley, CA	2	30,911	197	7.6	\$900	\$567	\$60	\$100	\$727	\$727	Dedicated
RTE_18	Comp. Reefer	Chico, CA to Susanville, CA	0	16,596	202	5.7	\$997	\$581	\$0	\$75	\$0	\$997	LTL OTR
RTE_16	Comp. Reefer	Chico, CA to Napa, CA	1	18,752	277	8.0	\$714	\$797	\$30	\$106	\$933	\$933	Dedicated
RTE_12	Comp. Reefer	Chico, CA to Weed, CA	2	40,917	285	9.2	\$821	\$820	\$60	\$121	\$1,002	\$1,002	Dedicated
RTE_17	Comp. Reefer	Chico, CA to San Andreas, CA	2	33,952	311	9.7	\$755	\$895	\$60	\$128	\$1,083	\$1,083	Dedicated
RTE_14	Comp. Reefer	Chico, CA to Fort Bragg, CA	1	21,291	381	9.9	\$847	\$1,096	\$30	\$131	\$1,258	\$1,258	Dedicated
RTE_11	Comp. Reefer	Chico, CA to Crescent City, CA	2	38,288	588	14.7	\$1,372	\$1,692	\$60	\$0	\$0	\$1,372	TL OTR
Weekly Total			22	403,794	4342	129	\$15,740	\$12,495	\$660	\$1,306	\$10,301	\$14,584	

* Total hours includes one hour for drop-off, one for pickup and the average driving hours assuming 55 mph

* Max driving hours permitted per day =10.

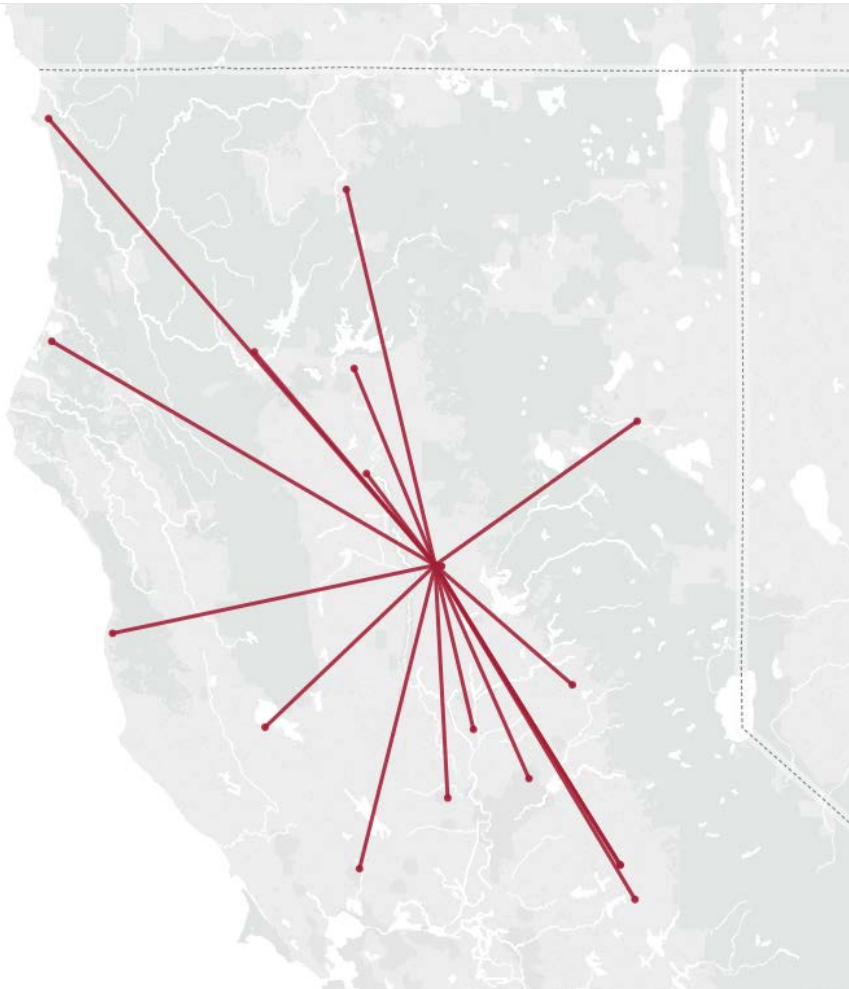
CONSOLIDATION ANALYSIS FUTURE VOLUME

- Compartmental Reefer weekly shipments before consolidation=18
- Dry Van shipments weekly before consolidation=18
- Compartmental Reefer weekly shipments after consolidation=8
- Dry Van shipments weekly after consolidation=6
- The mixed analysis uses two dedicated trucks per week , one dry van and one compartmental reefer.
- The remaining shipments were sent OTR (one dry van and the two compartmental reefer).
- Annual Total Cost includes the cost of the OTR and the dedicated shipments, assuming the volume will be static each week. Same shipments will be planned for each week to deliver food frequently on each food bank.

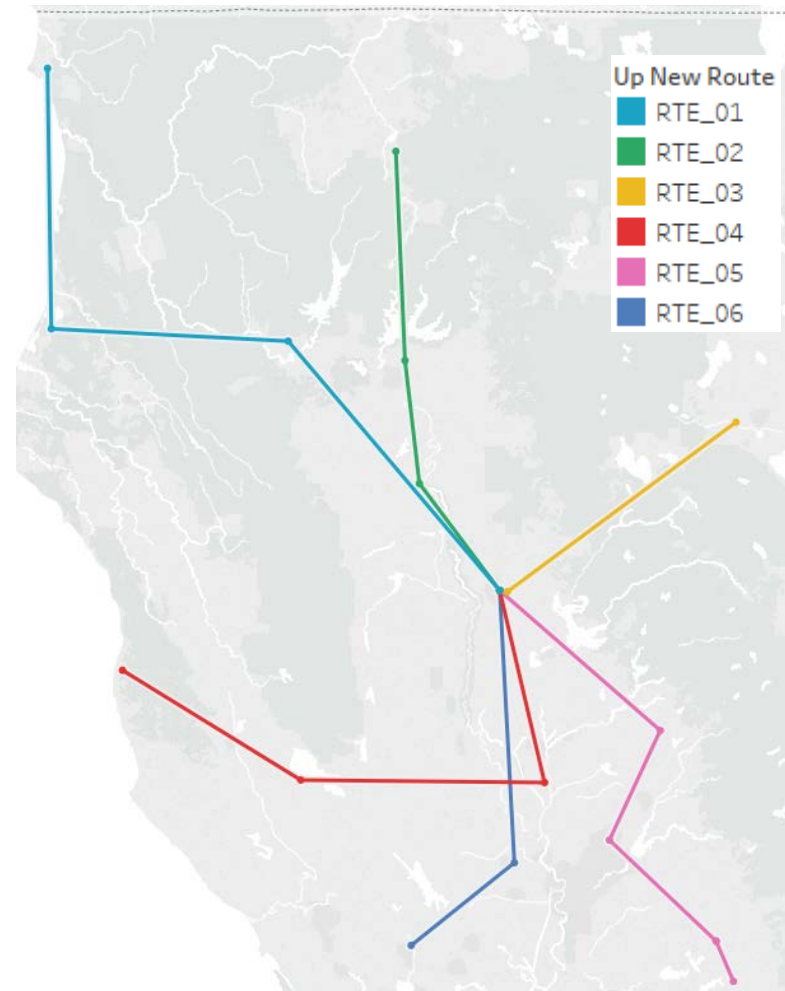
Chico CA network optimization mixed dedicated/OTR proposal based on future volume increase		
Description	Dry Van	Comp. Reefer
Amount of Dedicated Trucks	1	1
Dedicated Weekly Fixed Cost per unit	\$615.61	\$615.61
Dedicated Hours	47	47
Amount Dedicated Weekly Shipments	5	6
Amount OTR Weekly Shipments	1	2
Total OTR Weekly Cost	\$1,914	\$2,369
Total Dedicated Weekly Cost	\$5,258	\$5,043
Total Weekly Cost	\$7,172	\$7,412
Annual Total Cost	\$758,350	

DRY VAN SHIPMENTS BEFORE AND AFTER CONSOLIDATION AND WEIGHT INCREASE

18 ROUTES



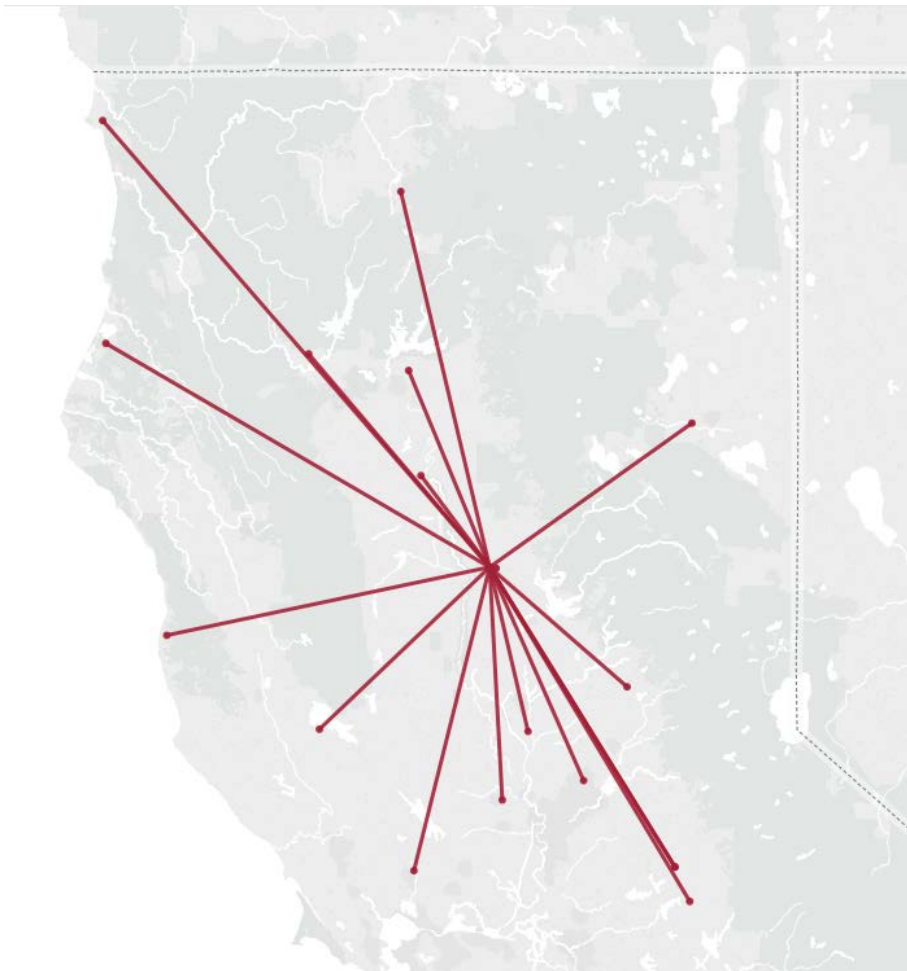
6 ROUTES



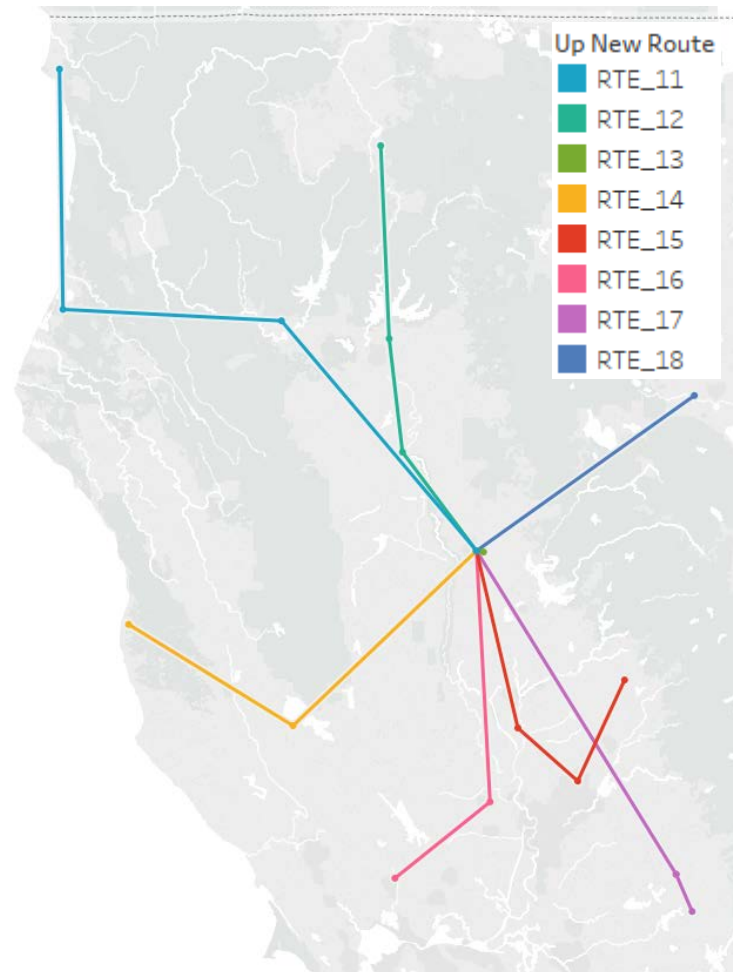
- The map on the left represents a shipment per week to each of the destination's food banks direct.
- The map on the right represents a routing model with multi-drop shipments. These routes will be static and repeated each week.

REEFER SHIPMENTS BEFORE AND AFTER CONSOLIDATION AND WEIGHT INCREASE

18 ROUTES



8 ROUTES



- The map on the left represents a shipment per week to each of the destination's food banks direct.
- The map on the right represents a routing model with multi-drop shipments. These routes will be static and repeated each week.

EXECUTIVE SUMMARY

- Transplace built a transportation model to deliver efficiently and more frequently food to northern California food banks in rural areas. This model was created using 2018 data provided with the historical demand of food delivered. This model is projected to be scalable if the demand of food increase/decrease the model is adjustable to operate efficiently. The savings projected are for directional purposes, Transplace didn't receive the real baseline on the data provided, no historical cost was provided. Transplace estimated an initial baseline cost based on historical volume to have an initial point to compare optimal results. The optimal model is a blended mix of OTR LTL/Truck and dedicated fleet shipments with 53' Trailers.

Executive Summary							
Stage	DC Location	Note	Annual Shipments	Weight	Cost	Projected Savings	% Savings
2018 Baseline	Sacramento, CA	2018 Transportation Network built based on direct shipments under a 100% dedicated model. Keeping the same frequency of deliveries as received.	955	7,763,107	\$966,851	\$0	0%
Network Optimization	Sacramento, CA	Optimize transportation network by adding multi-stop shipments under a 100% dedicated model. Keeping the same frequency of deliveries as received.	925	7,763,107	\$896,599	\$70,252	7%
Network Optimization	Redding, CA	Optimize transportation network by adding multi-stop shipments under a 100% dedicated model. Keeping the same frequency of deliveries as received.	950	7,763,107	\$854,692	\$112,159	12%
Network Optimization	Chico, CA	Optimize transportation network by adding multi-stop shipments under a 100% dedicated model. Keeping the same frequency of deliveries as received.	909	7,763,107	\$729,819	\$237,032	25%
Transportation Asset	Chico, CA	Optimize transportation network by adding multi-stop shipments under a mixed model (Dedicated and OTR). Assuming constant weekly volume deliveries.	520	7,763,107	\$628,140	\$338,711	35%
Transportation Asset	Chico, CA	Optimize transportation network by adding multi-stop shipments under a mixed model (Dedicated and OTR). Assuming constant weekly volume deliveries and weight increase proportionally for future scenario.	728	20,997,285	\$758,350		

REST EASY. WE WON'T.

TRANSPLACE

