



Market Based Transit Study

B-Line Service Alternatives Working Paper

Revised 10/27/2009
Butte County Association of
Governments



TRANSIT RESOURCE CENTER

The logo for the Transit Resource Center, featuring a stylized 'TRC' monogram inside a light blue oval, positioned above a dark blue horizontal bar containing the text 'TRANSIT RESOURCE CENTER' in white, uppercase letters.

Introduction

Background

This is a working paper on four service alternatives for the B-Line fixed route bus service in Butte County. It is the third working paper for the BCAG Market-Based Transit Study.

The first working paper, finalized in June 2009, reported on the results of Community Telephone and E-Survey Reports. The market research report was based on the data collected from three surveys: a random community telephone survey of Butte County residents, a non-random e-survey of Butte County commuters (college students and employees) and a comprehensive survey of B-Line riders. The later survey of B-Line riders was completed in 2008 and was conducted under a separate contract. A few of the key findings are repeated below.

Butte County's population appears to be surprisingly open to the concept of using public transportation. Both the general population reflected in the phone survey, and the commuter population reflected in the e-survey, include large segments of potential riders.

Phone Survey

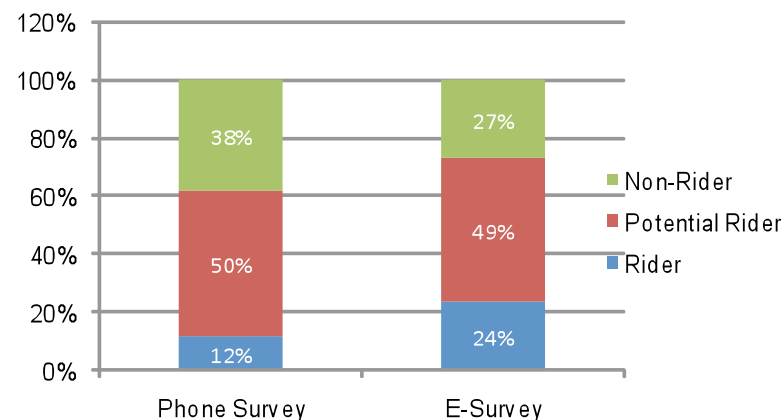
- Twelve percent of residents already use the bus, at least occasionally, and fully half of the population says they would be willing to consider riding if service were convenient.
- Among the potential riders, 63% say they believe using transit would be "convenient" and 87% say they can realistically see themselves using B-Line if service improvements were made.

E-Survey

- Of commuters who responded to the e-survey, 24% currently use B-Line at least once a month, while half (49%) are potential riders open to the idea of using B-Line regularly.
- Commuters captured in the e-survey were somewhat less optimistic about B-Line's convenience than potential riders in the general population. Thirty-nine percent (39%) of the potential riders thought B-Line would be convenient, and 66% thought they would realistically consider using B-Line if major improvements were made.

Even among residents who don't use B-Line regularly, many indicated a true willingness to give it a try.

Market Segments



The majority (about 80%) of both the Butte County population included in the phone survey and the respondents to the e-survey enjoys full modal choice. This means that if passengers are to be attracted to transit use it will be because of factors other than lack of a vehicle.

Despite the high level of modal choice, there is currently a significant minority of the population which uses alternative modes of transportation to commute to work or school.

】 Phone Survey

- Among the general population, only two-thirds (66%) drive alone to work or school. Twenty percent carpool, 5% bike, 4% ride the bus, and 4% walk.
- Among potential riders in the general population, 65% currently drive alone, while 25% carpool.

☰ E-Survey

- Among the e-survey respondents, 70% drive alone, while 11% bicycle, 8% carpool, 7% ride the bus and 4% walk.
- Student commuters are much more likely to ride the bus (23%), bike (19%) or walk (13%). Only 33% drive alone.
- Among the potential commute riders, 79% drive alone, while 9% bike and 9% carpool.

The second working paper, completed in July 2009, was the Existing Conditions Report. The purpose of this report is to provide an accurate baseline for the development of four alternatives for the Market Based Transit Study. The main feature of this report is individual route profiles of the Chico Urban Routes and Regional Routes 20, 40, and 41. A summary of existing performance is provided below.

Chico Urban Routes

The table at the right provides a summary of the average monthly performance from September 2007 to June 2008 when CSUC and other schools are in session. Route 6 has the highest average monthly ridership at 17,384 monthly passengers. Route 8, one of the CSUC student routes, has the highest productivity at 39.0 passengers per hour. Route 7 has the lowest ridership with just 1,696 monthly passengers and just 5.8 passengers per hour. The cost per passenger is just \$2.02 for Route 8, but is \$12.14 for Route 7.

Chico Routes	10- month Average FY 2007/08: 9/2007-6/2008				
	Monthly Rev. Hrs.	Monthly Costs	Monthly Passenger	Pass/ Rev. Hour	Cost/ Passenger
1	465	32,550	9,201	19.8	\$3.54
2	456	31,920	7,629	16.7	\$4.18
3	388	27,160	9,230	23.8	\$2.94
4	388	27,160	7,676	19.8	\$3.54
5	611	42,770	8,395	13.7	\$5.10
6	627	43,890	17,384	27.7	\$2.52
7	294	20,580	1,696	5.8	\$12.14
8	259	18,130	10,102	39.0	\$2.02
9	259	18,130	6,861	26.5	\$2.97
10	338	23,660	4,692	13.9	\$5.04

Oroville Routes

The table at the right shows the performance of the four local Oroville routes. There are significantly fewer monthly revenue hours in Oroville than in Chico, which reflect the lower demand levels. Average monthly passengers for this weekday-only service range from 351 to 790 monthly passengers. Productivity, as measured in passengers per vehicle revenue hour, is particularly low, ranging from 4.8 to 11.0 passengers per hour. Route 27 is higher than average because it does serve a number of students at Las Plumas High School before and after school.

Oroville Routes	10- month Average FY 2007/08: 9/2007-6/2008				
	Monthly Rev. Hours	Monthly Costs	Monthly Passengers	Pass/ Rev. Hour	Cost/ Passenger
24	74	\$5,145	351	4.8	\$5.85
25	114	\$7,980	790	6.9	\$6.37
26	49	\$3,430	396	8.1	\$6.79
27	57	\$3,990	628	11.0	\$7.20

Regional Routes

There are five regional routes that connect the towns and cities of Chico, Oroville, Paradise, Magalia, Gridley and Biggs. Service levels vary greatly. Route 20 offers hourly service on weekdays and service every two hours on weekends. Route 20 has high productivity for a longer intercity route, at 19.3 passengers per hour, with a cost per passenger of just \$3.63.

At the other end of the service level continuum is Route 31, with just one trip in the morning and one trip in the afternoon between Oroville and Paradise on weekdays only. The service averages 9 passengers per hour, which is lowest among the B-Line intercity routes, but still quite respectable compared to other peer intercity services. Routes 40 and 41 between Magalia, Paradise and Chico provide over 700 monthly revenue hours of service. Route 40 is slightly more productive with 13.9 passengers and a cost per trip of \$5.04, second to Route 20.

Regional Routes	10- month Average FY 2007/08: 9/2007-6/2008				
	Monthly Rev. Hours	Monthly Costs	Monthly Passengers	Pass/ Rev. Hour	Cost/ Passenger
20	518	\$36,260	9,999	19.3	\$3.63
30	131	\$9,170	1,311	10.0	\$7.00
31	39	\$2,730	353	9.0	\$7.74
40	427	\$29,890	5,930	13.9	\$5.04
41	289	\$20,230	2,954	10.2	\$6.85

In addition to these two working papers, a series of workshops was held between March 30th and April 2nd 2009 to receive public input on the B-Line system and opportunities for improvement in the future. Many of the public comments received were considered in the development of the alternatives presented in this working paper.

The final input to the development of the four alternatives was a Design Summit held with BCAG staff, Veolia staff, two elected officials representing the Project Development Team, and project consultant staff, from July 28th to July 30th. General sessions were held on each day:

- July 28th: Chico Routes
- July 29th: Regional Routes and Oroville Routes
- July 30th: Preliminary Proposals.

The primary purpose of the Design Summit was to utilize the results of the market research, public input, and evaluation of existing B-Line services to craft four alternatives to the B-Line route network and schedule. It was a collaborative process among the design summit team participants. The consulting team also conducted field investigations during the three-day Design Summit. This working paper builds on the Design Summit results.

Overview of Alternatives

B-Line provided 67,024 annual vehicle revenue hours as of November 2008, the baseline date used for the Market-Based Transit Study. The four alternatives include:

1. A 10% decrease in vehicle revenue hours.
2. Reallocation of existing vehicle revenue hours to better meet market needs.
3. 10% increase in vehicle revenue hours.
4. Market Based scenario that reasonably matches market needs with B-Line service levels without a financial constraint.

The alternatives will include individual specific actions that can be implemented separately if, for example, there is a need for a 5% reduction in service instead of a 10% reduction.

Breakdown of Existing Annual Vehicle Revenue Hours and Service Levels

Exhibit E-1 is a breakdown of existing vehicle revenue hours by route and service type for both weekday and weekend service. There are a total of 67,024 vehicle revenue hours for the existing B-Line Service.

Exhibit E-2 provides a summary of the existing service levels for B-Line by route and the days of the week. The span of service and frequencies by time of day are provided for each route in the B-Line system.

Exhibit E-1, Existing Vehicle Revenue Hours

Chico Routes	Daily Weekday	Daily Saturday	Daily Sunday	Annual Total
1	19.83	10.00		5,578
2	19.43	10.00		5,476
3	16.23	9.83		4,651
4	16.23	9.95		4,657
5	26.70	10.00		7,329
6	27.48	10.00		7,528
7	11.83	9.83		3,529
8	11.50*			1,744
9	11.50*			1,744
10	13.90	9.90		4,059
Subtotal	174.7	96.5		46,294
Oroville Routes				
24/25/26/27	13.9			3,532
Regional Routes				
20	20.4	9.9	9.9	6,215
30	4.75	7.0		1,575
31	1.82			463
40	16.30	10.9	7.9	5,130
41	13.33	1.4		3,471
Subtotal	56.6	29.1		16,855
Paradise Routes				
46	1.4			344
Total	247.8	125.6	17.7	67,024

*Table ES-1 Note: A reduced service span on Fridays results in only 8.50 hours on Routes 8 and 9.

Exhibit E-2, Existing Service Levels

	Weekdays					Saturday			Sunday		
	Span of Service		Frequency (Minutes)			Span of Service		Freq.	Span of Service		Freq.
	Start am	End pm	Peak	Midday	Evening	Start am	End pm	Minutes	Start	End	
Chico Routes											
1	8:15	9:15	30	60	30	8:50	5:15	60	-	-	-
2	6:15	7:50	30	60	30	8:50	5:43	60	-	-	-
3	6:20	10:02	30/60	60	60	8:20	6:10	60	-	-	-
4	6:18	7:42	30	60	60	8:18	6:15	60	-	-	-
5	6:23	7:42	30	30	60	8:23	6:10	60	-	-	-
6	6:16	9:45	30	30	60	8:16	6:16	60	-	-	-
7	6:46	6:36	60	60	60	8:46	6:36	60	-	-	-
8	7:30	7:00	30	30	-	-	-	-	-	-	-
9	7:38	7:08	30	30	-	-	-	-	-	-	-
10	7:20	8:12	60	60	60	8:50	6:44	60	-	-	-
Oroville Routes											
24	6:46	5:28	120	160	180	-	-	-	-	-	-
25	7:05	5:28	60	60	60	-	-	-	-	-	-
26	8:36	4:57	120	120	120	-	-	-	-	-	-
27	7:36	5:57	120	120	120	-	-	-	-	-	-
Regional Routes											
20	5:50	7:20	60	120	45	7:50	5:42	120	7:50	5:42	120
30	7:42	5:17	240	240	240	8:42	4:47	120	-	-	-
31	6:37	6:00	2 trips/day			-	-	-	-	-	-
40	6:50	7:31	60	120	45	7:50	6:41	120	9:50	5:42	120
41	6:03	6:51	60	120	100	9:36	5:41	2/trips	-	-	-
Paradise Routes											
46			3 trips/day								

Alternative 1

10% reduction in Vehicle Revenue Hours

A 10% reduction in vehicle revenue hours would require a reduction of approximately 6,700 vehicle revenue hours.

The six recommended actions to reduce vehicle revenue hours are based on the results of the existing conditions report and discussions at the July Design Summit. The main criterion for selecting actions to reduce vehicle revenue hours was whether a route was meeting minimum performance standards for passengers per vehicle revenue hour. BCAG has established the following performance standard for passengers per vehicle revenue hour for B-Line services:

- Minimum standard to be achieved- URBAN: 19.5 passengers per vehicle revenue hour. RURAL: 12.5 passengers per vehicle revenue hour.
- Desired standard to be achieved- URBAN: 21.5 passengers per Revenue Hour. RURAL: 14 passengers per vehicle revenue hour

The six potential reductions in services are routes or time periods that are below the minimum productivity standards.

1. Elimination of Route 7 with mitigation measures to provide coverage to Sierra Sunrise Village and Pleasant Valley High School

Eliminate Route 7 from fixed route service. As discussed in detail in the existing conditions report, Route 7 had just 5.8 passengers per vehicle revenue hour with a cost of \$12.04 per passenger, well below the system average. While many residents at the Sierra Sunrise Village could be eligible for B-Line Paratransit service, a necessary action would be to provide B-Line Paratransit service to all residents of the Sierra Sunrise Village, regardless of their ADA eligibility.

The student ridership to Pleasant Valley High School could be picked up with a new commuter route, coordinated with the Pleasant Valley High School and Marsh JHS bell times, but open to the general public.

The elimination of Route 7 would result in a savings of 3,529 annual vehicle revenue hours.

2. Reduction of service frequencies on Route 5

Route 5 has 30-minute frequencies from 6:23 am to 9:50 am connecting the downtown Transit Center and Chico Mall via 8th and 9th Sts. and Forest Ave. However, next to Route 7, Route 5 had the lowest productivity of the Chico Routes with 13.7 passengers per vehicle revenue hour. While the service frequencies are desirable, passengers destined to the Chico Mall area can also travel by Route 6 with 30-minute frequencies all day long. In comparison, Route 6 receives 27.7 passengers per vehicle revenue hour. The reduction of Route 5 to 60 minute headways would reduce annual vehicle revenue hours by 3,343.

3. Eliminate Route 46 in Paradise

Route 46 in Paradise provides three trips a day between Almond and Birch and the Feather River Hospital, Monday to Friday only. Route 46 had 2.7 passengers per vehicle revenue hour and a cost per passenger trip of \$25.76. It is the least cost-effective route in the B-Line system. Based on a review of B-Line Paratransit statistics, passenger demand on Route 46 can be easily accommodated into the B-Line Paratransit service. B-Line Paratransit could open the service to the general public for trips to and from Feather River Hospital, which is already served extensively on a daily basis. The reduction in Route 46 would reduce B-Line fixed route annual vehicle revenue hours by 344 annual hours.

The first three reductions in service are the recommended reductions to achieve a 10% reduction in B-Line service. Other candidate reductions that could warrant consideration if additional reductions are required, or a substitution in a service reduction action is desired.

4. Reduce Saturday Service to 8 vehicle revenue hours per day on Chico Routes

There are currently approximately 10 hours per day for Chico Routes on Saturdays. This action would reduce the number of hours to 8 vehicle revenue hours per Saturday on Chico routes. On an average weekday, Chico routes carry 24.4 passengers per revenue hour. On Saturdays, Chico routes carry about 16.6, a 47% decrease. The last runs of Saturday service have even lower productivity. The reduction in Saturday service to 8 vehicle revenue hours would reduce annual VRH by 1,222.

5. Eliminate Route 24 in Thermalito

Route 24 runs between Thermalito and Oroville at long headways of up to three hours. Thermalito is very low density, and this route performs poorly, with only 4.8 passengers per vehicle revenue hour and a cost per passenger trip of \$14.65. Thermalito could be better served by B-Line Paratransit buses that BCAG could consider opening to the general public in the Thermalito area. This action would result in a saving of 1,211 VRH

6. Eliminate Sunday service on Routes 20 and 40

Sunday service on Route 20 and 40 performs poorly compared to weekday and Saturday performance. Route 20 carries 18.3 passengers per revenue hour on Saturday and 12.1 passengers per revenue hour on Sunday, 51% less productivity. Route 40 also carries 18.3 passengers per/revenue vehicle hour on Saturday and 10.8 on Sunday, 81% less productivity. Reducing Route 20 and 40 weekend service to Saturdays only would save about 922 annual hours. Sunday service on both Routes 20 and 40 is just slightly below the minimum standard of 12.5 for rural services. This would reduce 992 annual.

Exhibit 1-1 shows the daily and annual vehicle revenue hours for Alternative 1, the 10% reduction in B-Line vehicle revenue hours. Alternative 1 reduces vehicle revenue hours from 67,024 to 60,393 with the implementation of reduction actions #1,2, and 3 above. Exhibit 1-2 shows the service levels by route on the next page.

Exhibit 1-1, 10% Reduction in Vehicle Revenue Hours				
	Daily	Daily	Daily	Annual
Chico Routes	Weekday	Saturday	Sunday	Total
1	19.83	10.00		5,578
2	19.43	10.00		5,476
3	16.23	9.83		4,651
4	16.23	9.95		4,657
5	14.00	10.00		4,090
6	27.48	10.00		7,528
8	11.50*			1,744
9	11.50*			1,744
10	13.90	9.90		4,059
Commuters	3.00			480
Subtotal	130.1	69.7		40,006
Oroville Routes				
25/26/27	13.9			3,532
Regional Routes				
20	20.4	9.9	9.9	6,215
30	4.8	7.0		1,575
31	1.8			463
40	16.3	10.9	7.9	5,130
41	13.3	1.4		3,471
Subtotal	56.6	29.1	17.7	16,854
Total	200.5	98.8	17.7	60,393

*A reduced service span on Fridays results in only 8.50 hours on Route 8 and 9

Exhibit 1-2, Alternative 1 10% Reduction in Vehicle Revenue Hours Service Levels

	Exhibit 1-2, Alternative 1 10% Reduction in Vehicle Revenue Hours Service Levels										
	Weekdays					Saturday			Sunday		
	Span of Service		Frequency			Span of Service		Freq.	Span of Service		Freq.
	Start	End	Peak	Midday	Evening	Start	End		Start	End	
Chico Routes											
1	8:15	9:15	30	60	30	8:50	5:15	60	-	-	-
2	6:15	7:50	30	60	30	8:50	5:43	60	-	-	-
3	6:20	10:02	30/60	60	60	8:50	6:10	60	-	-	-
4	6:18	7:42	30	60	60	8:50	6:15	60	-	-	-
5	6:23	7:42	60	60	60	8:50	6:10	60	-	-	-
6	6:16	9:45	30	30	60	8:50	6:36	60	-	-	-
8	7:30	7:00	30	30	-	-	-	-	-	-	-
9	7:38	7:08	30	30	-	-	-	-	-	-	-
10	7:20	8:12	60	60	60	8:50	6:44	60	-	-	-
Oroville Routes											
24	6:46	5:28	120	160	180						
25	7:05	5:28	60	60	60	-	-	-	-	-	-
26	8:36	4:57	120	120	120	-	-	-	-	-	-
27	7:36	5:57	120	120	120	-	-	-	-	-	-
Regional Routes											
20	5:50	7:20	60	120	45	7:50	5:42	120	7:50	5:42	
30	7:42	5:17	240	240	240	8:42	4:47	120	-	-	-
31	6:37	6:00	2 trips/day			-	-	-	-	-	-
40	6:50	7:31	60	120	45	7:50	6:41	120	9:50	5:42	
41	6:03	6:51	60	120	100	9:36	5:41	2/trips	-	-	-

Alternative 2: Reallocation of Existing Vehicle Revenue Hours

Alternative 2 reallocates the existing number of vehicle revenue hours in response to the findings of the market research and public participation process.

Chico Routes

Based on input during the July Design Summit, as well as the finding from the market research and public participation process, the potential for providing 15 minute service in the Chico downtown area was explored. A new core route would be established that combines Routes 1, 6 and 10, as shown on Exhibit 2-1. The route would provide 15 minute service during peak commute periods (starting at 2:30 pm to also serve school commutes). The route has preliminarily been nicknamed Route 15 to indicate the 15-minute service frequency objective. Route 15 would serve the Chico Mall, the Forest Avenue destinations including Butte College Chico campus, and then use E. Park to Martin Luther King Parkway, E. 20th St., Dr. Martin Luther King Parkway, Park Ave to access downtown and the Transit Center. It would then continue along the Esplanade corridor to E. Lassen Ave, where the route and buses would alternate route ends to continue along the Route 1 alignment along E. Lassen Ave. (15A) and the Route 10 alignment continuing along Esplanade to its terminus (15B).

This alternative reallocates existing vehicle revenue hours. Route 15 service would only operate every 15 minutes during the peak commute periods, and every 30 minutes on 15A and 15B. During the midday, service would operate every 30 minutes along the core, and every 60 minutes at the 15A and 15B terminal ends. An illustrative schedule for Route 15 is shown as Exhibit 2-2.

The desire for improved frequency in Chico was expressed strongly in the results of the market research and public participation processes. Of the potential riders in the e-survey, for example, 64% preferred increased frequencies compared to longer hours (36%). The City of Chico General Plan has an objective of 15-minute transit service in the core area of Chico. These findings were discussed in the July Design Summit and the recommendation for 15-minute service during peak commute periods is just a starting point. 30-minute frequencies in the evenings is proposed in the 10% increase in vehicle revenue hour alternative (Alternative 3) as well as significantly improved frequencies at all times in the market-based alternative (Alternative 4) later in this report.

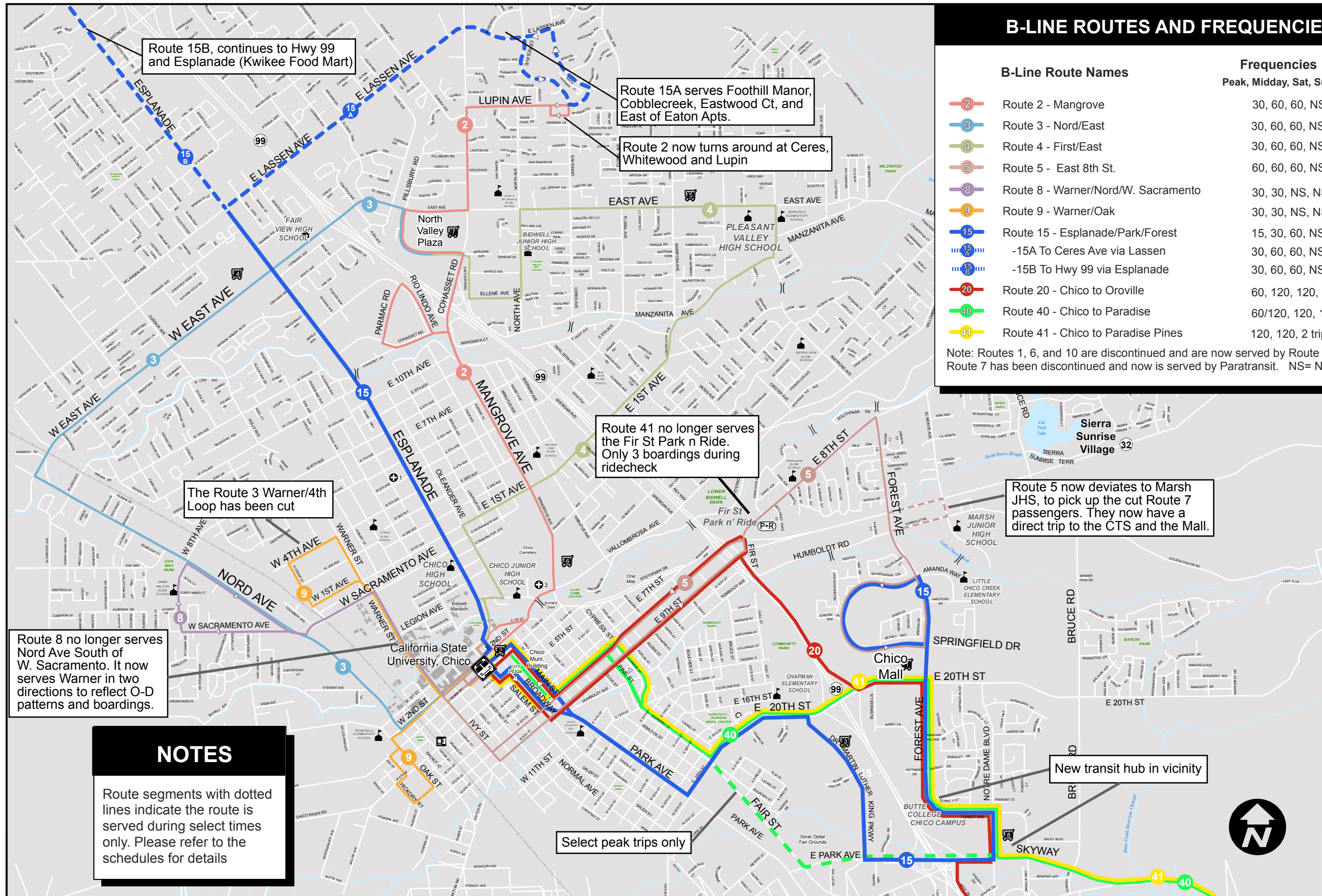
In response to CSUC student comments in the e-survey as well as the public participation process, Routes 8 and 9 would be extended to 10 pm on weekdays.

Exhibit 2-1, Alternative 2: Chico Routes and Service Frequencies

B-LINE ROUTES AND FREQUENCIES

B-Line Route Names		Frequencies
		Peak, Midday, Sat, Sun
2	Route 2 - Mangrove	30, 60, 60, NS
3	Route 3 - Nord/East	30, 60, 60, NS
4	Route 4 - First/East	30, 60, 60, NS
5	Route 5 - East 8th St.	60, 60, 60, NS
8	Route 8 - Warner/Nord/W. Sacramento	30, 30, NS, NS
9	Route 9 - Warner/Oak	30, 30, NS, NS
15	Route 15 - Esplanade/Park/Forest	15, 30, 60, NS
15A	-15A To Ceres Ave via Lassen	30, 60, 60, NS
15B	-15B To Hwy 99 via Esplanade	30, 60, 60, NS
20	Route 20 - Chico to Oroville	60, 120, 120, 120
40	Route 40 - Chico to Paradise	60/120, 120, 120, 120
41	Route 41 - Chico to Paradise Pines	120, 120, 2 trips/day, NS

Note: Routes 1, 6, and 10 are discontinued and are now served by Route 15. Route 7 has been discontinued and now is served by Paratransit. NS= No Service



NOTES

Route segments with dotted lines indicate the route is served during select times only. Please refer to the schedules for details



Exhibit 2-2, Proposed Route 15 Schedule (Combined Routes 1-6-10)

Lassen Ceres	Espde Hwy 99	Transit Center	Chico Mall		Transit Center	Lassen Ceres	Espde Hwy 99	
-		-	6:15		6:45	7:15		
-		-	6:45		7:15		7:45	
6:15	6:30	6:45	7:15		7:45	8:15		
-		-	7:30		8:00		8:30	
6:45		7:15	7:45		8:15	8:45		
	7:00	7:30	8:00		8:30		9:00	G
7:15		7:45	8:15		8:45	9:15		
	7:30	8:00	8:30		9:00	G		
7:45		8:15	8:45		9:15	9:45		
	8:00	8:30	9:00	G		-		
8:15		8:45	9:15		9:45		10:15	
	8:30	9:00	9:30	G		-		
8:45		9:15	9:45		10:15	10:45		
	9:15	9:45	10:15		10:45		11:15	
9:45		10:15	10:45		11:15	11:45		
	10:15	10:45	11:15		11:45		12:15	
10:45		11:15	11:45		12:15	12:45		
	11:15	11:45	12:15		12:45		13:15	
11:45		12:15	12:45		13:15	13:45		
	12:15	12:45	13:15		13:45		14:15	
12:45		13:15	13:45		14:15	14:45		

Lassen Ceres	Espde Hwy 99	Transit Center	Chico Mall		Transit Center	Lassen Ceres	Espde Hwy 99	
	13:15	13:45	14:15		14:45	15:15		
-		-	14:30		15:00		15:30	
13:45		14:15	14:45		15:15	15:45		
-		-	15:00		15:30		16:00	
	14:15	14:45	15:15		15:45	16:15		
-		15:00	15:30		16:00		16:30	
14:45		15:15	15:45		16:15	16:45		G
	15:00	15:30	16:00		16:30		17:00	
15:00		15:45	16:15		16:45	17:15		G
	15:30	16:00	16:30		17:00		17:30	
15:45		16:15	16:45		17:15	17:45		
	16:00	16:30	17:00		17:30		18:00	G
16:15		16:45	17:15		17:45	18:15		
	16:30	17:00	17:30	G		-		
16:45		17:15	17:45		18:15		18:45	G
	17:00	17:30	18:00	G		-		
17:15		17:45	18:15		18:45	19:15		
	17:45	18:15	18:45		19:15	19:45		G
18:15		18:45	19:15		19:45	20:15		
19:15		19:45	20:15		20:45	21:15		
20:15		20:45	21:15		21:45	22:15		
21:15		21:45						

G: Bus out of service

In order to accommodate the increased frequency on the new core route 15 with the same number of vehicle revenue hours, it would be necessary to eliminate Route 7 from fixed route service. As discussed in detail in the existing conditions report, Route 7 had just 5.8 passengers per hour with a cost of \$12.04 per passenger, well below the system average. While many residents at the Sierra Sunrise Village could be eligible for B-Line Paratransit service, a necessary action would be to provide B-Line Paratransit service to all residents of the Sierra Sunrise Village, regardless of their ADA eligibility. Guaranteed two-hour response time should be considered for the general public service and could be provided to connect to Route 15 or other routes at the Chico Mall.

The student ridership to Pleasant Valley High School could be picked up with a new commuter route, coordinated with the Pleasant Valley High School and Marsh JHS bell times, but open to the general public. Alternative 2 includes 12 daily hours of commuter service, open to the general public, but timed to coordinate with school bell times on Routes 2,4, and 7.

It would also be necessary to reduce the frequencies on Route 5 from 30-minutes to every 60-minutes. Next to Route 7, Route 5 had the lowest productivity of the Chico Routes with 13.7 passengers per hour. Route 6 also serves the Chico Mall and has a very high productivity of 27.7 passengers per hours with all-day 30-minute frequencies. While the existing frequency of 30-minutes is desirable, it is felt that the vehicle revenue hours devoted to Route 15 will improve overall system productivity. Route 15 combines routes 1,6, and 10. All portions of routes 1 and 10 will continue to be served, but portions of Route 6 are no longer served because the route now uses Park to reach the Chico Mall. Costco on Whitman is no longer served, as well as the area near C St.

Alternative 2 also has a few route adjustments recommended for the Chico Routes:

- Route 8 would have two-way routing on Warner St. to better connect CSUC origins and destinations.
- Route 3 deviation via 4th and Cedar would be eliminated when CSUC is in session. In the evenings Monday through Thursday Routes 8 and 9 would have 60-minute service during the school year to 10 pm. Route 3 deviation could continue when Route 9 is not operating.
- Route 2 would not be interlined with Route 1 as is currently the practice. A new terminal loop is recommended using Ceres Ave. Eaton Ave and E. Lassen Ave., serving Foothill Manor, Cobblecreek, Eastwood Court, and East of Eaton apartments.

Oroville Service

The existing Oroville routes are not working well. There are significantly fewer monthly revenue hours in Oroville than in Chico, which reflect the lower demand levels. On average, Routes 24, 26 and 27 have frequencies every 120 minutes and route 25 has a frequency of every 60 minutes. Service is operated only from Monday to Friday. Average monthly passengers for this weekday-only service range from 351 to 790 monthly passengers. Productivity, as measured in passengers per revenue hour, is particularly low, ranging from 4.8 to 11.0 passengers per hour, below the BCAG minimum standard of 12 passengers per vehicle revenue hour for rural routes. Route 27 is higher than average because it does serve a number of students at Las Plumas High School before and after school.

At the July 2009 Design Summit and during consultant team field visits, a transition away from fixed-route service to zonal general public dial-a-ride service was discussed. Two recommended zones on either side of the Feather River are shown in Exhibit 2-3. It is recommended

that one dedicated bus operate in each zone. One to two existing B-Line Paratransit buses would serve both ADA Paratransit trips and general public trips in each zone. Each dedicated bus would ensure a timed transfer with Route 20 for trips between zones or trips to and from Chico. This will require same-day dispatching with a two-hour advanced reservation required. A review of a sample of Oroville B-Line Paratransit buses showed there was sufficient capacity to accommodate additional general public demand response trips.

Paradise/Magalia Service

The primary service in Paradise and Magalia is Routes 40 and 41. As described further below, the service levels on Routes 40 and 41 would remain the same in Alternative 2. In Alternative 2, it is recommended that Route 46 be eliminated in Paradise. Route 46 has the lowest productivity of all Routes in the B-Line system with 2.7 passengers per vehicle revenue hour and cost of \$25.18 per passenger trip. It is recommended that general public dial-a-ride service be provided to the Feather River Hospital.

Regional Routes

In general, the feedback received during the public participation process and the on-board survey is that the regional routes are generally working well; the passenger productivity statistics presented earlier support this finding. In Alternative 2, the service levels would remain the same. However, in order to coordinate better with Route 15 and to provide better access to the Chico Mall area, Exhibit 2-4 shows the changes proposed for the Regional Routes.

Route 20 now exits SR99 at Skyway in Chico, turns on Notre Dame, serves the Butte College–Chico Campus, then turns onto E. 20th to serve the front side of the Chico Mall before reentering SR99 and continuing on the remainder of the original route. In Oroville, Route 20 no longer would runs the one way loop to Oro Dam Blvd., Feather River, Mitchell Ave to Spencer Ave.; it terminates at the Oroville Transit Center (OTC). The loop had a low number of boardings, and required passengers to wait at the OTC for as much as 10 minutes before continuing to Chico.

Route 40 now traces the new routing of Route 20 in Chico, starting at Notre Dame to Butte College. It serves the Chico Mall at E.20th, then crosses SR99, passes Sierra Nevada Brewery, then turns on Mulberry Street to pick up the rest of the original route.

Route 41 traces the route of Route 40, and no longer serves the Fir Street Park n' Ride. Ridecheck data indicated that only 3 riders used this stop, and OD patterns do not indicate that Chico residents commute to Magalia.

Exhibit 2-5 shows the summary of the vehicle revenue hours for all services in Alternative 2.

Exhibit 2-6 shows the frequencies by time of day and span of service for all routes.

Exhibit 2-3, Oroville B-Line Routes and DAR Zones

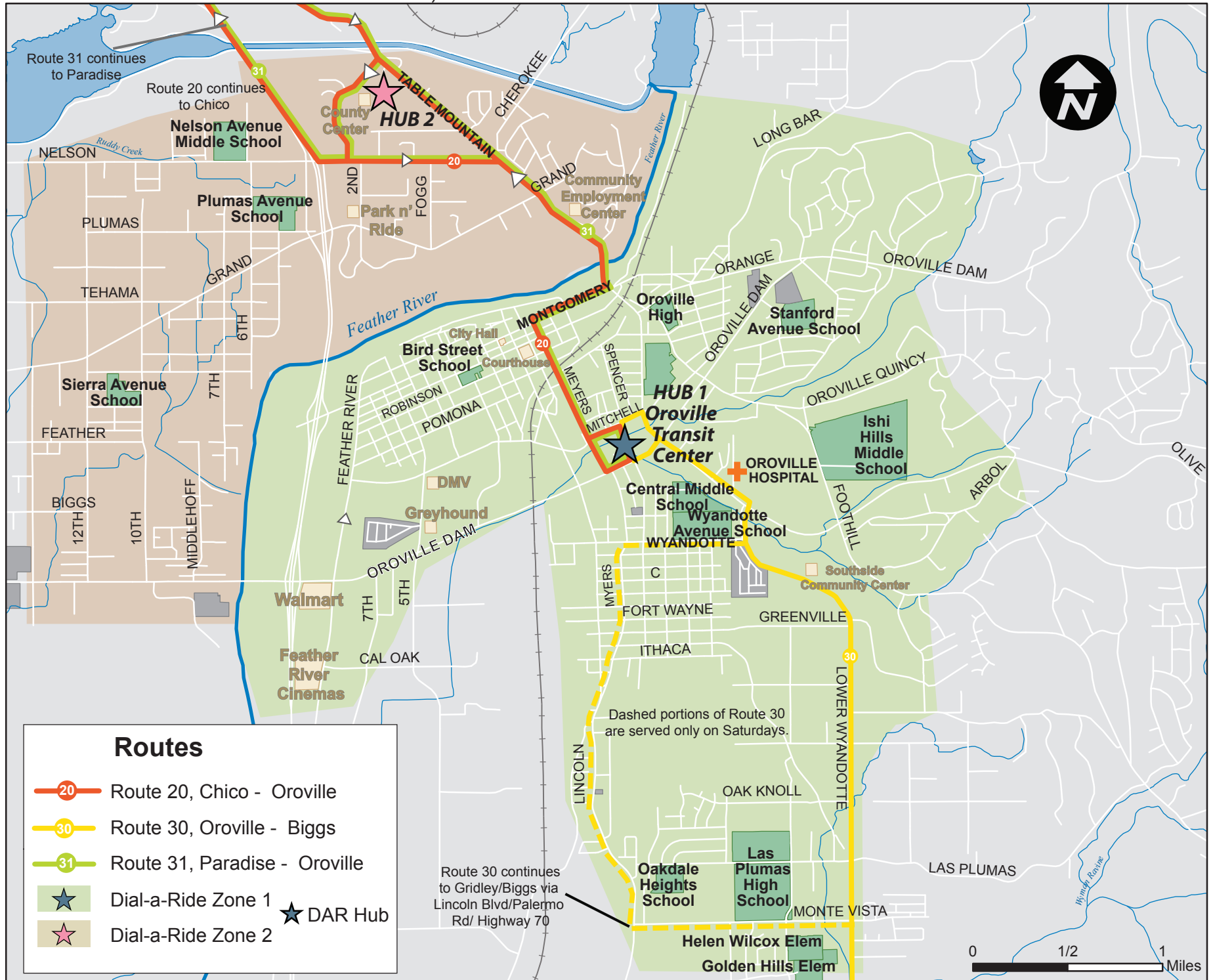
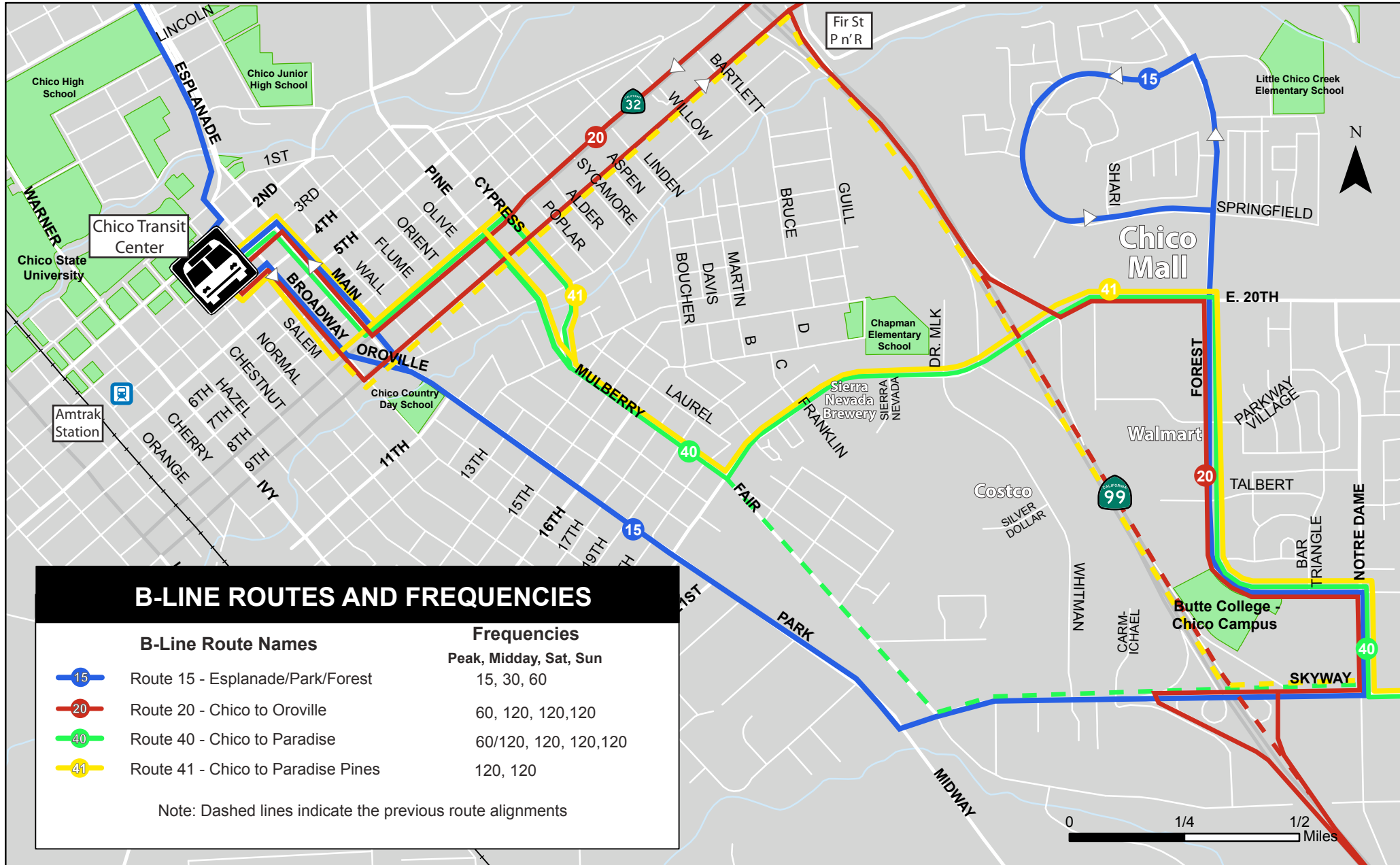


Exhibit 2-4, Revised B-Line Regional Routes and Route 15 Within Chico



**Exhibit 2-5
Alternative 2 Reallocation of Existing Vehicle Revenue Hours**

	Daily Weekday	Daily Saturday	Daily Sunday	Annual Total
Chico Routes				
15 (1/6/10)	75.0	17.0		20,009
2	14.5	10.5		4,244
3	14.5	10.5		4,244
4	14.5	10.5		4,244
5	14.5	10.5		4,244
8	14.5			2,320
9	14.5			2,320
Commuter Routes	12.0			1,920
Chico Subtotal	174.0	59.0	0.0	43,543
Oroville Zonal DAR				
DAR Bus 1	13.0			3,315
DAR Bus 2	13.0			3,315
Paratransit 3	Existing			
Paratransit 4	Existing			
Oroville Subtotal	26.0	0.0	0.0	6,630
Regional Routes				
20	20.4	9.9	9.9	6,215
30	4.8	7.0	0.0	1,575
31	1.8	0.0	0.0	463
40	16.3	10.9	7.9	5,130
41	13.3	1.4	0.0	3,471
Total, regional	56.6	29.1	17.7	16,854
Grand Total	256.6	88.1	25.6	67,027

Exhibit 2-6, Alternative 2 Reallocation of Service Hours: Service Levels

	Weekdays					Saturday			Sunday		
	Span of Service		Frequency (Minutes)			Span of Service		Freq.	Span of Service		Freq.
	Start am	End pm	Peak	Midday	Evening	Start am	End pm	Minutes	Start	End	
Chico Routes											
15 (1/6/10)	6:15	9:45	15	30	60	8:50	7:15	60	-	-	-
2	6:15	8:45	60	60	60	8:50	7:15	60	-	-	-
3	6:15	8:45	60	60	60	8:50	7:15	60			
4	6:15	8:45	60	60	60	8:50	7:15	60	-	-	-
5	6:15	8:45	60	60	60	8:50	7:15	60	-	-	-
8	7:30	10:00	30	30	60						
9	7:30	10:00	30	30	60	-	-	-	-	-	-
Commuter Routes			Timed to school bell times								
Oroville Zonal DAR											
DAR Bus 1	6:00	7:00	Zonal Dial-A-Ride								
DAR Bus 2	7:00	8:00	Zonal Dial-A-Ride								
Paratransit 3	9:00	5:00	Zonal Dial-A-Ride								
Paratransit 4	9:00	5:00	Zonal Dial-A-Ride								
Regional Routes											
20	5:50	7:20	60	120	30	7:50	5:42	120	7:50	5:42	120
30	7:42	5:17	240	240	240	8:42	4:47	120	-	-	-
31	6:37	6:00	2 trips/day			-	-	-	-	-	-
40	6:50	7:31	60	120	~90	7:50	6:41	120	9:50	5:42	120
41	6:03	6:51	60	120	100	2 trips/day			-	-	-

Alternative 3

10% Increase in Vehicle Revenue Hours

Alternative 3 provides specific recommended actions for increasing vehicle revenue hours by 10%. The actions build on the recommended re-allocation of vehicle revenue hours in Alternative 2. A 10% increase in vehicle revenue hours equals an increase of 6,700 vehicle revenue hours.

The recommendation for the service level improvements reflects the differing viewpoints expressed in the trade-off analysis in the market research element of this study. The market research found that for Chico respondents who were defined as *potential* riders, 76% in the e-survey and 71% in the phone survey preferred more service on more routes and more buses operating on local routes within Chico, compared to more buses on regional routes connecting Chico with other communities in Butte County. For *existing* B-Line riders in the e-survey, the preference for more local service was even greater with 82% preferring local service improvement over regional service improvements. The results from respondents from areas other Chico were the exact opposite. For those respondents defined as potential riders, 32% and 47% in the e-survey and phone survey, respectively, preferred more routes and buses operating on local routes within the community, with the majority respondents in both surveys preferring more buses on regional routes connecting their community with other communities in Butte County.

A balanced approach between regional route improvements and Chico Routes is recommended, based on the market research and public participation input.

1. Improve the service frequencies on Routes 20 and 40 during peak commute periods.

BCAG recently added one run from Oroville to Chico in August 2009. This alternative would add a round trip during the morning and afternoon commute periods on both Routes 20 and 40. This recommendation is in response to non-Chico residents' strong preferences for "more buses on regional routes connecting your community with other communities in Butte County." These additional peak period runs will help to alleviate overcrowding on some existing runs, but also attract new ridership. This alternative increases the number of vehicle revenue hours by 2,052 annual hours.

2. Add Sunday service on Chico Routes.

In the market research in the phone survey, for Chico residents, 69% preferred the trade-off choice of "buses in Chico could run every 60 minutes, seven days a week with 30 minutes' service only during commute hours on weekdays". Only 31% of potential riders preferred the trade-off choice of "buses in Chico could run every 30 minutes throughout the day on weekdays only".

In the survey of existing B-Line riders, respondents ranked more Sunday service as their highest ranked improvement. 51% of B-Line riders said that more frequent Sunday service was very important. Sunday service at present is limited to Routes 20 and 40. As was pointed out

in the onboard survey, of employed workers currently riding B-Line, 53% work on Saturday, and 42% work on Sundays. 32% of respondents said they could get to and from work on the bus with the existing span of service, but 68% say on Saturdays and Sundays the bus is not running when they need it.

It should be noted that in this alternative, 30 minutes per day was also reduced on Routes 2,3,4 and, 5 on weekdays.

Adding Sunday requires an additional 2,652 vehicle revenue hours.

3. Add 30 minutes frequencies on Route 15 until 10:30 pm.

In Alternative 2, evening Route 15 buses operate at 60-minute frequencies after 6:30 pm. This recommendation would increase Route 15 frequencies to every 30 minutes until 10:30 pm. This would be an important “stepping stone” in improving service on Route 15. Alternative 4 would continue the improved frequencies to 15 minute service all day long with 30 minute service off-peak. The Alternative 3 improvement requires an additional 2,040 vehicle revenue hours.

4. Increase the Commuter Routes from 12 to 16 daily hours.

In Alternative 2, 12 daily hours were set aside for commuter routes to coordinate with bell times at middle and high schools on Route 2, 4, and 7 and would only operate on school days and would be open to the general public. This recommendation increase the capacity of the commuter routes by an additional four hours that can utilized at the discretion of B-Line staff. In other jurisdictions, such commuter routes can generate significant ridership. The onboard survey found that 27% of student ridership was from high school (23%) and middle school students (4%). The potential ridership among middle school students is substantial. This improvement would require an additional 640 vehicle revenue hours.

Exhibit 3-1 provides a summary of vehicle revenue hours for Alternative 3: Increase vehicle revenue hours by 10%.

Exhibit 3-2 shows the proposed service levels for Alternative 3.

Exhibit 3-1				
Alternative 3 10% Increase in Vehicle Revenue Hours				
	Daily Weekday	Daily Saturday	Daily Sunday	Annual Total
Chico Routes		Vehicle Revenue Hours		
Route 15 (1/6/10)	83.0	21.0	17.0	23,141
2	14.5	10.5	8.5	4,686
3	14.5	10.5	8.5	4,686
4	14.5	10.5	8.5	4,686
5	14.5	10.5	8.5	4,686
8	11.5			1,840
9	11.5			1,840
Commuter Routes	16.0			2,560
Chico Subtotal	180.0	63.0	51.0	48,123
Oroville Zonal DAR				
DAR Bus 1	13.0			3,315
DAR Bus 2	13.0			3,315
Paratransit 3	Existing			
Paratransit 4	Existing			
Oroville Subtotal	26.0	0.0	0.0	6,630
Regional Routes				
20	24.4	9.9	9.9	7,248
30	4.8	7.0	0.0	1,575
31	1.8	0.0	0.0	463
40	20.3	10.9	7.9	6,150
41	13.3	1.4	0.0	3,471
Total, regional	64.6	29.1	17.7	18,907
Grand Total	270.6	92.1	25.6	73,660

Exhibit 3-2, Alternative 3 10% Increase in Vehicle Revenue Hours

	Weekdays					Saturday			Sunday		
	Span of Service		Frequency (Minutes)			Span of Service		Freq.	Span of Service		Freq.
	Start am	End pm	Peak	Midday	Evening	Start am	End pm	Minutes	Start	End	
Chico Routes											
Core 1/6/10	6:15	10:30	15	30	30	8:50	7:15	60	8:50	5:15	60
2	6:15	8:45	60	60	60	8:50	7:15	60	8:50	5:15	60
3	6:15	8:45	60	60	60	8:50	7:15	60	8:50	5:15	60
4	6:15	8:45	60	60	60	8:50	7:15	60	8:50	5:15	60
5	6:15	8:45	60	60	60	8:50	7:15	60	8:50	5:15	60
8	7:30	10:00	30	30	60						
9	7:30	10:00	30	30	60						
Commuter Routes			Timed to school bell times								
Oroville Zonal DAR											
DAR Bus 1	6:00	7:00	Zonal Dial-A-Ride								
DAR Bus 2	7:00	8:00	Zonal Dial-A-Ride								
Paratransit 3	9:00	5:00	Zonal Dial-A-Ride								
Paratransit 4	9:00	5:00	Zonal Dial-A-Ride								
Regional Routes											
20	5:50	7:20	30	120	20	7:50	5:42	120	7:50	5:42	120
30	7:42	5:17	240	240	240	8:42	4:47	120	-	-	-
31	6:37	6:00	2 trips/day			-	-	-	-	-	-
40	6:50	7:31	60	120	~90	7:50	6:41	120	9:50	5:42	120
41	6:03	6:51	60	120	100	2 trips/day			-	-	-

Alternative 4

Market-Based Alternative

This alternative is designed to match future B-Line services with estimated market demands. The alternative is not financially constrained. The alternative uses the input from the public participation process, the market research and the Design Summit to craft a network of fixed-route services that gives residents a reasonable choice of public transportation.

In the general population survey, the question was asked, if “major improvements” were made, would respondents use B-Line service. Sixty-nine percent (69%) of the total sample—a surprisingly high number—said they would be likely to try using B-Line in the coming year. This was especially true of potential and existing B-Line riders. The following recommendations in service frequencies (the top improvement identified in the market research) are what would be necessary to convert a majority of the high percentage of potential riders into actual riders.

Please note that there is no implied time frame for these improvements to satisfy estimated market demands. Service would need to be implemented in phases, and would only be expanded if minimum performance standards are met or exceeded for the previous phase.

Chico Routes

For the recommended Chico core route #15, Alternative 4 would build on the improvements recommended in Alternatives 2 and 3. Exhibit 4-1 shows the recommended progression of service levels with the three Alternatives. During weekdays, Route 15 would have 15-minute all-day service, with 30-minute service from 7 pm to 11 pm, and 60-minute owl service to 3 am in the core Chico area¹. On Saturdays, service would be every 30 minutes until 11 pm with 60-minute owl service to 3 am. On Sundays, 30 minutes service would be provided to 6 pm and 60-minute service to 9:00 pm.

Routes 2,3,4 and 5 weekday schedules would all have 30-minute frequencies to 7 pm, and 60-minute service to 11 pm. On weekends, service would also be available on Saturdays to 11 pm and Sundays to 9 pm. This would enable many evening restaurant and shopping center workers to have alternative transportation home throughout Chico seven days a week.

¹ There would not be a need for owl service to 3 am to the Chico Mall. The route would serve the core of area of Chico, but would be a ‘to-be-determined’ shorter route.

**Exhibit 4-1
Route 15 Service Levels by Alternative**

Alt.	Route 15	Weekdays						Saturday			Sunday		
		Span of Service		Frequency (Minutes)				Span of Service		Freq.	Span of Service		Freq.
		Start am	End pm	Peak	Midday	Evening	Late Eve	Start am	End pm	Minutes	Start am	End	Minutes
2	Reallocation	6:15	9:45	15	30	60		8:50	7:15	60			
3	10% increase	6:15	11:00	15	30	30		8:50	7:15	60			
4	Market-Based	6:15	3:00 AM	15	15	30	60	7:00	3:00 AM	30*	8:00	9:00	30*

*60 minutes after 11:00 am

Students at CSUC could take evening classes that typically end at 9:50 pm and be able to commute home on B-Line to areas served by the fixed route network in Chico. These improvements in service span and frequency respond to the market research findings that many riders work on Saturdays, Sundays and evenings and need B-Line during those times in order to have a reasonable transportation alternative. In the e-survey, the most significant barrier to B-Line use was that respondents “work on weekends” and another 29% said that a barrier to using B-Line service was “I work outside of B-Line operating hours every week or occasionally on weekends.” These service level improvements remove this barrier.

If approved by CSUC, service levels on Routes 8 and 9 would be improved to every 15 minutes, from 7:30 am to 7 pm on Monday to Thursday and until 5 pm on Fridays. A new combined 8/9 owl service would offer 30-minute service to 11 pm and 60-minute service to 3:00 am on Mondays through Thursdays. The proposed routing is shown on Exhibit 4-2. When CSUC is not in session, there would also be lifeline 60-minute service on the 8/9 owl service. This evening and late night owl service would replace the current Route 3 loop via 4th and Cedar on Saturdays and when CSUC is not in session. There were several suggestions at the CSUC public input session for providing later evening service and Route 8 and 9 service when school is not in session.

Exhibit 4-2, B-Line Route 8/9 OWL Route Alignment



The existing annual vehicle revenue hours in Chico are 46,294. In alternative 4, with the above improvement to meet market needs, the number of annual vehicle revenue hours would be over 89,000, almost double the existing vehicle revenue hours. While these service levels are not achievable in the near-term, Alternative 4 provides a vision to work toward in Chico so that permanent and temporary student residents have a reasonable choice of public transportation in Chico.

Oroville Service

Alternative 4 in Oroville would significantly increase the vehicle revenue hours in Oroville. In this market-based alternative, existing Route 25 and its hourly frequencies would be expanded to include other activity centers and residential areas. The exact route would be determined from the ridership patterns generated with the zonal dial-a-ride service recommended in Alternative 2. Service would be available from 6:30 am to 7:30pm on weekdays, 8:00 am to 10:00 pm on Saturdays and 9:00 am to 5:30 pm on Sundays.

The existing Route 24 would be upgraded to hourly service and a schedule would be built to enable route deviation within $\frac{3}{4}$ mile of the route. The route would be planned from the actual ridership generated from the zonal dial-a-ride service recommended in Alternative 2, and only if productivity on the zonal dial-a-ride service exceeds an average of 5 passengers per hour in the Thermalito area. Service would be available from 6:30 am to 7:30pm on weekdays, 8:00 am to 10:00 pm on Saturdays and 9:00 am to 5:30 pm on Sundays.

Similar to Chico, commuter routes would be provided to coordinate with school bell times, including Nelson Avenue High School, Las Plumas High School and Oroville High School.

In Oroville, local services would more than double under Alternative 4 from the existing annual supply of vehicle revenue hours of 3,351 to 8,500.

Paradise and Magalia Area

As discussed previously, the Paradise area is currently well-served by Regional Routes 40 and 41. Internal circulation is currently provided in Paradise when buses loop along Skyway, Wagstaff, Clark and Pearson. Route 41 provides service between Magalia and Paradise every two hours and provides some circulation in residential areas in Paradise. However, there is no local transit service, leaving much of Paradise and Magalia unserved by public transportation. In Alternative 4, a zonal general public dial-a-ride would be extended throughout Paradise and Magalia. The dial-a-ride buses would be timed to provide connections to Routes 40 and 41 and provide local trips within the two towns. A total of 10,100 vehicle revenue hours would be added to provide local Paradise and Magalia service in Alternative 4.

Regional Routes

The objective would be for Routes 20 and 40 to have 30 minutes frequencies during peak commute periods in the peak direction of travel. However, additional runs would only be added if all runs exceed the minimum 12.5 passengers per vehicle revenue hour. For example, from Paradise to Chico, additional runs would be added until the service frequency between 6 am and 9 am was 30 minutes, in combination with Route 41. In the reverse direction, from Chico to Paradise, there may be only a need to add one or two additional runs during the peak periods to satisfy demand.

After the peak commute period, service would continue on Routes 20 and 40 with 120 minutes frequencies to 11 pm. On weekends, service levels would remain at every two hours, but would also be extended to 11 pm on Saturdays and 9 pm on Sundays..

With the implementation of zonal dial-a-ride in Paradise and Magalia, no further improvements in service levels to Route 41 are recommended to Magalia. After Route 41 ceases at 6:23 pm, a zonal dial-a-ride bus would meet all route 40 buses, and provide service to Magalia on a demand basis.

Route 30 currently has service every four hours between Oroville, Gridley and Biggs. On Saturdays, service currently increases to approximately every two hours. In Alternative 4, service would be expanded to every two hours, from 7 am to 7 pm seven days a week. Route 30 currently generates 10 passengers per vehicle revenue hour, below the minimum standard of 12 passengers per revenue vehicle hour. Ideally, service would also be available to 11 pm, similar to Routes 20 and 40. The extension of hours would only occur if the service between 7 am and 7 pm exceeds the minimum productivity standard

Route 31 currently provides one trip in each direction between Paradise and Oroville during commute times. The majority of regular riders are Butte County workers. In Alternative 4, there would be a choice of two morning and afternoon trips between Paradise and Oroville. The second peak period commute trip would serve the Butte College campus and Oroville. There would also be two midday trips in each direction that would also serve Oroville, the Butte College campus and Paradise.

During the public participation process, there was significant input received on the need for B-Line service to Butte College. Butte College currently has an extensive bus service with regular schedules from Butte County communities to the campus. The service, however, is only available to students. There are no transit alternatives available to faculty and staff at the campus. The extension of service on Route 31 between Oroville and Paradise is only a partial solution to the market needs at Butte College. For service between Chico and Butte College, the ideal solution would be to enable faculty and staff to ride the network of Butte College buses. There would need to be an expansion of capacity on the Butte College route network, as many of the existing runs with students are at capacity. In order for B-Line to extend commuter bus service from Chico to Butte College, there would need to be a financial partnership between BCAG and Butte College to provide the necessary subsidy to fund the service.

There was also extensive input on the need to provide B-Line service to other areas of Butte County. In addition to Butte College, the other two areas most often mentioned were Forest Ranch and the Chico airport area. Alternative 4 provides 16 vehicle revenue hours for implementing new regional routes, with a focus on commute service. While there is strong evidence that a Butte College commute service would far exceed the 12 passengers per revenue vehicle hours, there is need for further study before other regional service could be implemented on a trial basis.

Under Alternative 4, the number of vehicle revenue hours for Regional Routes would increase from 16,855 to 32,800.

Inter-Regional Service to Yuba City and Sacramento

In both the general telephone survey and e-surveys, respondents were asked: “In a typical month, on how many days, if at all, do you go to Sacramento?” In the random sample telephone survey, 6% indicated they travelled three days a month or more. Another 16% indicated they travelled one or two days a month. The results were very similar in the e-survey. In the public participation process, connections along Highway 99 to Gridley, Live Oak, Yuba City and Sacramento were discussed. Overall, the demand for B-Line service to Yuba City and Sacramento would not be significant based on the survey results. However, the public input could warrant a year-long demonstration project in the future.

Alternative 4 includes Inter-Regional Service along the Highway 99 corridor to Yuba City and Sacramento. The proposed approach would be to partner with Yuba-Sutter Transit that has operated Highway 99 service to Sacramento since 1994. Yuba-Sutter’s Highway 99 commuter service provides morning pick-up and afternoon drop-offs at the Yuba County Government Center, Walton Terminal (Sam’s Club) and the Bogue Road Park and Ride lot. Six runs in the morning and six runs in the afternoon are provided during commuter periods to and from Sacramento. In Sacramento, stops are made at:

- J & 4th
- J & 8th
- J & 11th
- 15th & K
- 15th & N
- P & 13th
- P & 9th
- P & 5th

Yuba-Sutter Transit also offers three midday runs, with two serving the Highway 70 corridor through Oroville and one serving the Highway 99 corridor.

The proposed inter-regional service would have two morning runs and two evening runs originate in Chico, provide service to Gridley, Live Oak, and Yuba City, and then continue to Sacramento. Yuba-Sutter Transit is planning to expand their commuter service and their Midday

Service in FY 2011/12, and this may be an opportunity to implement a new service originating from Chico. The implementation of the expanded service may get delayed due to the current economic recession.

The proposed service levels to Yuba City would require approximately 2,551 annual vehicle revenue hours.

Alternative 4 Summary of Vehicle Revenue Hours

Exhibit 4-3 provides a summary of vehicle revenue hours by route and geographical area of Chico. This market-based alternative would require more than doubling vehicle revenue hours. In order to achieve the service levels described above, the number of vehicle revenue hours would need to increase from the existing 67,000 vehicle revenue hours to 143,000 vehicle revenue hours. As mentioned previously, Alternative 4 is not financially constrained and may not be financially feasible in the foreseeable future. It does provide a long-range vision to work towards.

Exhibit 4-4 shows the frequencies and span of service for the market-based alternative that would give Butte County residents a reasonable choice to use public transportation for their daily activities.

Exhibit 4-3 Alternative 4 Vehicle Revenue Hours

	Daily Weekday	Daily Saturday	Daily Sunday	Annual Total
Chico Routes				
15 (1/6/10)	118.8	68.0	60.0	36,937
2	31.5	16.0	13.0	9,541
3	31.5	16.0	13.0	9,541
4	31.5	16.0	13.0	9,541
5	31.5	16.0	13.0	9,541
8	22.0			3,520
9	22.0			3,520
8/9 Owl/weekend	6.0	19.5	13.5	2,016
8/9 No CSUC	8.5			808
Commuter Routes	16.0			4,080
Chico Subtotal	319.3	151.5	125.5	89,043
Oroville Bus Service				
Oroville Circulator	13.0	9.5	8.5	4,251
Thermalito Route Deviation	13.0	9.5	9.5	4,303
Evening Zonal DAR	9.0	9.0	9.0	3,231
Commuter Route	4.0			640
Oroville Subtotal	39.0	19.0	18.0	8,554

	Daily Weekday	Daily Saturday	Daily Sunday	Annual Total
Regional Routes				
20	32.9	14.4	12.4	9,781
30	12.0	12.0	10.0	4,204
31	10.0	0.0	0.0	2,550
40	28.8	15.4	12.4	8,785
41	13.3			3,400
New Regional route(s)	16.0			4,080
Total, regional	97.0	41.7	34.8	32,800
Paradise/Magalia DAR				
DAR Bus 1	17.0	15.0	13.0	5,791
DAR Bus 2	13.0	9.5	9.5	4,303
Parad./Magal. Subtotal	30.0	24.5	22.5	10,094
Inter-Regional Service				
Yuba-City-Sac. Commter	6.7			1,700
Yuba-City Sac Midday	3.3			850
Inter-Regional Total	10.0	0.0	0.0	2,551
Grand Total	495.3	236.7	200.8	143,042

Exhibit 4-4, Alternative 4 Market Based Revenue Hours

	Weekdays						Saturday				Sunday			
	Span of Service		Frequency (Minutes)				Span of Service		Freq. (Min)		Span of Service		Freq. (Min)	
	Start am	End	Peak	Mid	Eve	OWL	Start am	End	Day	Eve	Start am	End PM	Day	Eve
Chico Routes														
15 (1/6/10)	6:15	3:00 AM	15	15	30	60	7:00	3:00 AM	30	60	7:00	9:00 PM	30	60
2	6:15	11:00 PM	30	30	60	-	7:00	11:00 PM	60	60	7:00	9:00 PM	60	60
3	6:15	11:00 PM	30	30	60		7:00	11:00 PM	60	60	7:00	9:00 PM	60	60
4	6:15	11:00 PM	30	30	60	-	7:00	11:00 PM	60	60	7:00	9:00 PM	60	60
5	6:15	11:00 PM	30	30	60	-	7:00	11:00 PM	60	60	7:00	9:00 PM	60	60
8	7:30	11:00 PM	30	30	60	-	-	-	-	-	-	-	-	-
9	7:30	11:00 PM	30	30	60	-	-	-	-	-	-	-	-	-
8/9 OWL-Weekend	11:00	3:00 AM	-	-	-	60	7:30	3:00 AM	60	60	7:30	9:00 PM	60	60
8/9 No CSUC	7:30	3:00 AM	60	60			7:30	3:00 AM	60	60	7:30	9:00 PM	60	60
Commuter Routes			Timed to school bell times											
Oroville Routes														
Oroville Circulator	6:30	7:30 PM	60	60	60	-	8:00	5:30 PM	60	60	9:00	5:30 PM	60	60
Thermalito Deviation	6:30	7:30 PM	60	60	60	-	8:00	5:30 PM	60	60	8:00	5:30 PM	60	60
Evening DAR Bus 1	7:30 PM	10:00 PM	Zonal Dial-A-Ride				5:30 PM	10:00 PM	Zonal DAR		5:30 PM	9:00 PM	Zonal DAR	
Evening DAR Bus 2	7:30 PM	10:00 PM	Zonal Dial-A-Ride											
Paratransit 3	9:00	5:00	Zonal Dial-A-Ride											
Paratransit 4	9:00	5:00	Zonal Dial-A-Ride											
Paradise Routes														
General Public DAR 1	7:00	11:00 PM	Zonal Dial-A-Ride				8:00	11:00 PM	Zonal DAR		8:00	9:00 PM	Zonal DAR	
General Public DAR 2	7:00	11:00 PM	Zonal Dial-A-Ride				8:00	5:30 PM	Zonal DAR		8:00	5:30 PM	Zonal DAR	
Regional Routes														
20	5:50	11:00 PM	30	120	20	-	7:50	11:00 PM	120	120	7:50	9:00 PM	120	120
30	7:00	7:00	120	120	120		7:00	7:00 PM	120	120	7:00	7:00 PM	120	120
31	6:37	6:00	2 trips/day				-	-	-	-	-	-	-	-
40	6:50	11:00 PM	60	120	~90		7:50	11:00 PM	120	120	7:50	9:00 PM	120	120
41	6:03	6:51	60	120	100		2 trips/day				-	-	-	-
99 to Sacramento	6:30	6:30 PM	2 trips Peak, 2 midday											