

City of Bakersfield

Bicycle Transportation Plan

Prepared by:

Alta Planning and Design

In Partnership with:

Ruettgers & Schuler Civil Engineers

Prepared for:

City of Bakersfield

The development of the Bicycle Transportation Plan is enabled by a clean air fund created by the Sierra Club and administered by the Rose Foundation for Communities and the Environment.



Acknowledgements

Mayor and City Council

Harvey Hall, Mayor

Willie Rivera, Ward 1

Terry Maxwell, Ward 2

Ken Weir, Vice Mayor, Ward 3

Bob Smith, Council Member, Ward 4

Harold Hanson, Council Member, Ward 5

Jacquie Sullivan, Council Member, Ward 6

Russell Johnson, Council Member, Ward 7

City Staff

Doug McIsaac, Community Development Director

Jim Eggert, Planning Director

Jennie Eng, Principal Planner

Kate Shea, Project Manager, Associate Planner

Ryan Starbuck, Traffic Engineer

Ed Murphy, Civil Engineer III

Alta Staff

Brett Hondorp, Principal

Jennifer Donlon Wyant, Project Manager

John Lieswyn, Assistant Project Manager

This page intentionally left blank.

Table of Contents

1. Introduction	1-1
1.1 Purpose of the Plan	1-1
1.2 Vision, Goals and Objectives	1-2
1.3 Bicycle Master Plan Process	1-3
1.4 Overview of the Plan	1-3
2. Existing Bicycle Facilities and Programs	2-1
2.1 Setting and Land Use	2-1
2.2 The Five E's and Bikeway Classifications	2-3
2.3 Engineering	2-4
2.4 Encouragement Programs	2-11
2.5 Education Programs	2-12
2.6 Enforcement Programs	2-13
2.7 Evaluation Programs	2-13
3. Needs Analysis	3-1
3.1 Types of Bicyclists	3-1
3.2 Bicycle Attractors and Generators	3-3
3.3 Commuter Travel	3-8
3.4 Bicycle Counts	3-9
3.5 Estimated Commuter and Utilitarian Bicyclists	3-10
3.6 Collision Analysis	3-13
3.7 Gap Analysis	3-21
3.8 Community Identified Needs	3-25
3.9 Summary of Bicyclist Needs	3-36
4. Bikeway Network Recommendations	4-1
4.1 Network Improvements	4-1
4.2 Spot Improvements	4-16
4.3 Bicycle Detection at Traffic Signals	4-19
4.4 Wayfinding Signage	4-19
4.5 Bicycle Parking Recommendations	4-20
4.6 Studies	4-22
5. Program Recommendations	5-1
5.1 Encouragement	5-1
5.2 Education	5-4
5.3 Enforcement	5-8
5.4 Evaluation	5-9
6. Benefits	6-1
6.1 Why Bicycling is Important	6-1
6.2 Future Usage and Benefits	6-1
7. Implementation	7-1
7.1 Bikeway Project Prioritization	7-1

7.2.	Bikeway Cost by Class and Tier	7-16
7.3.	Maintenance Cost Estimates	7-17
7.4.	High Priority Projects and Programs	7-18
8.	Funding Sources.....	8-1
8.1.	Federal Sources	8-1
8.2.	State Sources.....	8-7
8.3.	Regional & Local Sources.....	8-8
8.4.	Private Sources.....	8-9
8.5.	Other Sources.....	8-11
Appendix A. Design Guidelines		A-1
Appendix B. Plans and Policies		B-1
Appendix C. BTA Compliance.....		C-1
Appendix D. Previous Expenditures.....		D-1

Table of Figures

Figure 2-1: Metropolitan Bakersfield Land Use Map.....	2-2
Figure 2-2: Caltrans Bikeway Classificaitons	2-3
Figure 2-3: Caltrans Bikeway Signs	2-7
Figure 2-4: Loop detectors in use in Bakersfield	2-7
Figure 2-5: Bakersfield Existing Bikeway Network.....	2-9
Figure 3-1: Typology of Existing and Potential Bicyclists.....	3-1
Figure 3-2: Bicycle Attractors and Generators	3-7
Figure 3-3: Type of Collision.....	3-13
Figure 3-4: Time of Day	3-14
Figure 3-5: Bicycle Collisions - Lighting.....	3-14
Figure 3-6: Age of Party Involved.....	3-14
Figure 3-7: Reported Bicyclist-Involved Collision Map.....	3-19
Figure 3-8: Bikeway Gap Types	3-21
Figure 3-9: Bikeway Gaps	3-23
Figure 3-10: Age Distribution of Survey Respondents.....	3-25
Figure 3-11: Mode Share for Trips Under 1 Mile	3-25
Figure 3-12: Mode Share for Trips Under 5 Miles.....	3-26
Figure 3-13: Respondents' Reasons for Bicycling	3-26
Figure 3-14: Location Bicyclists Avoid in Bakersfield.....	3-27
Figure 3-15: Issues that Prevent Respondents from Riding More Often	3-28
Figure 3-16: Bicycle Facility Preferences.....	3-28
Figure 3-17: Ways to Encourage More Bicycling in Bakersfield	3-29
Figure 3-18: Driving Trips Perceived to be Feasible by Bike with Existing Facilities	3-29
Figure 3-19: Community Priorities - Downtown	3-31

Figure 3-20: Community Priorities - Northeast	3-32
Figure 3-21: Community Priorities Northwest	3-33
Figure 3-22: Community Priorities Southeast	3-34
Figure 3-23: Community Priorities Southwest	3-35
Figure 4-1: Bikeway Recommendations Overview	4-3
Figure 4-2: Bikeway Recommendations (Northwest)	4-4
Figure 4-3: Bikeway Recommendations (Northeast)	4-5
Figure 4-4: Bikeway Recommendations (Southeast)	4-6
Figure 4-5: Bikeway Recommendations (South)	4-7
Figure 4-6: Bikeway Recommendations (Southwest)	4-8
Figure 4-7: Class I Path	4-9
Figure 4-8: Class II Bike Lane	4-10
Figure 4-9: Class III Bicycle Route	4-12
Figure 4-10: Decision Wayfinding Signs	4-20
Figure 4-11: Confirmation Wayfinding Signs	4-20
Figure 6-1: Transportation and Obesity Rates	6-4

Table of Tables

Table 2-1: Existing Bikeways Summary	2-4
Table 2-2: Existing Bikeways Detail	2-5
Table 3-1: Bakersfield Public Schools	3-4
Table 3-2: Top 10 Employers (2010)	3-5
Table 3-3: Work Commute Mode Share by Geography	3-8
Table 3-4: Travel Time to Work	3-8
Table 3-5: Summary of Bicycle Counts by Site	3-9
Table 3-6: Existing Bicycling Demand (Estimated)	3-11
Table 3-7: Bicycling Air Quality Impact	3-12
Table 3-8: Annual Reported Bicycle Related Collisions (2006-2010)	3-13
Table 3-9: Common Collision Related Violations and Location	3-15
Table 3-10: Traffic Violation by Party at Fault	3-15
Table 3-11: Corridors Where Bicycle Related Collisions Involved Wrong Way Riding	3-15
Table 3-12: Top Collision Corridors	3-16
Table 3-13: Top Collision Intersections	3-17
Table 4-1: Summary of Proposed Bikeways by Class	4-2
Table 4-2: Recommended Class I Paths	4-9
Table 4-3: Recommended Class II Bike Lanes	4-10
Table 4-4: Recommended Class III Bicycle Routes	4-12
Table 4-5: Proposed Spot Improvements	4-16
Table 6-1: Projected Year 2030 Bicycling Demand	6-2
Table 6-2: Projected Year 2030 Bicycling Air Quality Impact	6-3

Table 7-1: Project Ranking Criteria.....	7-3
Table 7-2: Estimated Bikeway Unit Costs	7-4
Table 7-3: Prioritized Bikeway Projects by Tier.....	7-5
Table 7-4: Bikeway Maintenance Cost Estimates (Existing and Proposed).....	7-17
Table 7-5: High Priority Projects	7-18