

# City of Moreno Valley Department of Public Works

# **FINAL REPORT**

# **Bicycle Infrastructure and Implement Bicycle Education**

# **Contract Number ML16078**

# May 1, 2018

Prepared for the Mobile Source Air Pollution Review Committee (MSRC) under the AB 2766 Local Government Match Program

### Acknowledgements

Mobile Source Air Pollution Review Committee (MSRC)

South Coast Air Quality Management District (SCAQMD)

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This report fulfills Contract Number ML16078- **Bicycle Infrastructure and Implement Bicycle** Education by the City of Moreno Valley under the partial sponsorship of the Mobile Source Air Pollution Reduction Review Committee (MSRC). Work is complete as of May 1, 2018.

## Disclaimer

The statements and conclusions in this report are those of the contractor and not necessarily those of the Mobile Source Air Pollution Reduction Review Committee (MSRC) or the South Coast Air Quality Management District (SCAQMD). The mention of commercial products, their sources or their uses, in connection with material reported, is not to be construed as either an actual or implied endorsement of such products.

With the assistance of funding from the MSRC, the City of Moreno Valley Public Works Department completed four project elements that align with Moreno Valley's General Plan goals and objectives to support clean air policies and infrastructure that fosters reduced greenhouse gas emissions:

### 1. Construction of Class II bicycle lanes on Ironwood Avenue (Pigeon Pass Road to Perris Boulevard

Utilizing in-house staff and an outside contractor, the City installed Class II bike lanes on Ironwood Avenue between Pigeon Pass Road and Perris Boulevard. The installation involved complete removal of the existing striping and restriping the roadway with new striping that included 6-foot standard bike lanes. This addition to the City's bicycle network totaled 2 miles in length.

Ironwood Avenue is designated as a Class II bike facility in the City's Bicycle Master Plan and is a welltraveled bicycle corridor for both recreational and commuter cyclists. Attractions within the surrounding community include two schools, commercial retail centers, and multiple restaurants. Additionally, the connection is used for bicycle club rides that originate in Riverside, Redlands, and Loma Linda. The new bike lanes provide a connection to existing bike lanes located on Ironwood Avenue west of Pigeon Pass Road to Perris Boulevard, infrastructure previously installed using MSRC grant funding.

The City, using an outside consultant, gathered bicycle counts within the corridor on October 11, 2016 to document the "before" condition. Within a 24-hour period, there were nine cyclists traveling eastbound and eight cyclists traveling westbound.

The City, using an outside consultant, gathered bicycle counts within the corridor on August 15, 2017 to document the "after" condition. Within a 24-hour period, there were 19 cyclists traveling eastbound and 13 cyclists traveling westbound.

Considering the before and after counts, the segment experienced an approximate 88% increase in people on bikes using the facility. Input from local bicycle club members and local commuters indicated the changes were positive for the community.

#### Problems Encountered / lessons learned

The City did not experience significant issues with the installation of the Class II bike lanes. During construction, motorists experienced only minimal traffic congestion, and the public provided no negative feedback. Staff did note a couple of areas of rough pavement within the bicycle lane areas. City maintenance staff made minor asphalt repairs within the identified areas to improve the condition. It is important to verify the condition of the pavement when installing bike lanes and make repairs to provide a smooth riding surface.

#### **Emissions Benefits/Projections and Future Actions**

Replacing single occupant vehicle trips with bicycle transportation is an effective way to reduce reliance on fossil fuels and reduce greenhouse gas emissions. Although vehicle emissions have steadily declined due to regulations and improved technology, they continue to impact air quality and human health. In California, the transportation sector produces approximately 40 percent of carbon dioxide (CO2) emissions. The Environmental Protection Agency found the average vehicle emits just under a pound of CO2 per mile. If an individual chooses to commute five miles one-way, (a typical commute distance) almost 10 pounds of carbon dioxide emissions are avoided on a daily basis. The following table, excerpted from the City's Bicycle Master Plan, demonstrates the Greenhouse Gas (GHG) estimated reductions:

Employing the EPA's latest vehicle emissions data, the following table illustrates current estimated GHG reductions (pounds/year) attributable to commuter bicycling in Moreno Valley, and the potential for additional future reductions (approximately 20 percent) resulting from increased commuter bicycling to replace driving due to plan implementation:

GHG Component	Current	Future	Change
Carbon Dioxide	8,226,179	9,953,337	1,727,158
Carbon Monoxide	248,186	300,295	52,109
Hydrocarbons	27,220	32,936	5,716
Nitrous Oxide	19,014	23,006	3,992
Inhalable Particles	202	245	43

As the City expands its bicycle network through similar projects, continued air quality benefits will be realized as residents choose to replace short single occupant trips with bicycle trips.

# 2. Install 25 U-shaped bicycle racks on Alessandro Boulevard, between Old 215 Frontage Road and Perris Boulevard

The City employed its own staff to install 25 U-shaped, heavy-duty bike racks at local businesses, bus stops, and public facilities along Alessandro Boulevard between Old 215 Frontage Road and Perris Boulevard. Each rack accommodates two bikes, amounting to 50 additional bicycle parking spaces. This corridor has numerous restaurants, is in close proximity to large employment centers including City Hall and several large industrial buildings, and has an extensive number of bus stops.

Secure bicycle parking at probable destinations is an integral part of any bicycle network. Bicycle thefts are common and lack of secure parking is often cited as a reason people chose not to ride a bicycle. Inverted U-shaped racks in conspicuous locations make it easy to secure bicycles with a u-shaped lock through the frame and the rack. Inverted U-shaped racks afford the opportunity to support the bicycle at two points and allow for convenient locking.

City staff cited the racks at the City's Recreational Center, Library, local charter schools, bus stops, and near local restaurants. At private property locations, City staff solicited business owners and secured Right of Entries granting permission to install the individual racks. Locations of the installed racks are in accordance with the *Bicycle Parking Guidelines*, as published by the Association of Pedestrian and Bicycle Professionals.

This bicycle infrastructure component aligns directly with the City of Moreno Valley Bicycle Master Plan, which recommends the installation of parking in well-lit, secure locations close to main entrance of a building, typically no further from the entrance than the closest automobile parking space. City employees regularly use the racks as part of the City's bike share program, later described in this report.

#### Problems Encountered / lessons learned

The City experienced significant schedule delays issues with this part of the project due to the reluctance of business owners, or a lack of their availability, to agree to the installations. Staff visited numerous sites, conducted phone calls, sent emails, and returned several times to gain the required permissions. Some owners expressed that they did not see the value in installing the bike racks near, or

in front of, their businesses. However, business owners operating in leased space within a managed site, expressed interest to have the bicycle racks installed in front of their spaces as a means of accommodating their customers.

Due to the delays, the City requested an extension from the MSRC to allow the City more time to gain the necessary permissions. The City appreciates the MSRC consideration to our extension allowing the intended project to be completed.

#### **Emissions Benefits/Projections and Future Actions**

As part of the City's Bicycle Master Plan, secure and convenient bicycle parking is an integral end of trip facility that encourages the use of bicycles for short local trips to restaurants and other destinations. Building high quality infrastructure will assist the City in reducing harmful emissions and continue to improve air quality in the City and the region. The City will continue to install bicycle racks at existing locations and require developers to install them as part of their site improvements.

### 3. Installation of Rectangular Rapid Flash Beacons (RRFB) Elsworth Street and Juan Bautista De Anza Trail

City staff installed the Rectangular Rapid Flash Beacons at the intersection of the Juan Bautista De Anza trail and Elsworth Street. RRFBs improve the visibility and enhance the safety of trail users at this intersection. The existing crosswalk is a key link used daily by students traveling to and from two schools, the Towngate Community Center, and Towngate Memorial Park.

RRFBs supplement warning signs at uncontrolled crossings. They are user-actuated by both pedestrians and other trail users through a push button and flash with an irregular flash pattern. RRFBs are a lowcost solution that significantly increases yielding behavior at crosswalks.

This trail crossing location is part of the overall Master Plan for the Juan Bautista De Anza Trail that when complete, will provide approximately 7 miles of regional multi-use trail connecting the Towngate / Moreno Valley Mall area to Lake Perris Recreational area.

#### Problems Encountered / lessons learned

The City did not experience significant issues with the installation of the RRFBs. Construction of new Americans with Disabilities Act (ADA) compliant ramps augmented the overall improvement. Field observations of the site indicate numerous trail users in the community use the crossing daily and motorist yielding is very high.

#### **Emissions Benefits/Projections and Future Actions**

Integral to the City's Juan Bautista De Anza Trail Master Plan, highly visible crossing improvements encourage the use of the facilities by residents for recreation and for making short trips to adjacent destinations such as parks, schools, and commercial shopping sites. Building high quality infrastructure will assist the City in reducing harmful emissions and continue to improve air quality in the City and the region. The City will continue to build the Juan Bautista De Anza Trail to conclusion as funding becomes available and require development to complete gaps as part of their site planning.

#### 4. Implement Bicycle Education Program / Demonstration Bike Share

The City purchased two electric assist bicycles for City Hall employees to make short bicycle trips for lunch, to run errands, or to commute. Moreno Valley City Hall is located within 1-3 miles of many restaurants, commercial centers, two post offices, parks, and satellite City facilities affording the opportunity to reduce short single occupant auto trips in the area. City staff received approval from the MSRC for the following overview as part of the project implementation.

#### Overview

The City of Moreno Valley Employee Demonstration Bike Share Program promotes alternative modes of transportation by providing City employees, located at or near City Hall, an option to use a bicycle instead of their personal vehicle to go to lunch or commute. This demonstration program will run from January 1, 2017 to June 30, 2017.

Benefits of the program include:

 Reduced single occupant vehicle trips – demonstrate that short trips less than 3 miles are easily made by bicycle. More trips made by bicycle will lead to less congestion and reduced parking demand.
Improved employee wellness – employees can use the bicycles to get some exercise and improve their health.

3. Opportunity to lead by example – the program is a first among Inland Empire public agencies and can be a model for greener, more sustainable practices.

#### **Bike Storage**

The City has purchased two electric assist bicycles (E-bikes) that are very convenient and easy to ride. The bicycles will be kept indoors in a climate-controlled office. This reduces the chance of theft or vandalism and keeps the bicycles from being subjected to outside weather conditions and deterioration.

#### **Encouragement Efforts**

The City will officially launch the program through an email blast to all employees. Other avenues to promote the program will be through monthly City Manager reports and City newsletters. The City will host a bicycle safety-training workshop by a League Cycling Instructor (LCI) in January. Helmets will be given to all participants and a materials relating to the training will be distributed.

The City Traffic Engineer is an avid cyclist and will serve as the coordinator for the program. The coordinator will be available to provide orientation on the bicycles and additional tips on bicycling in the City. The coordinator will also ensure the bicycles are properly maintained to keep them in top running condition.

To reduce anxiety of being stranded should a mechanical failure occur, the City will contract with a local bicycle shop to pick up the bicycle at the breakdown point and return the employee back to work. The bicycle shop will make any necessary repairs and return the bicycle to City Hall. A phone number for the bicycle shop will be affixed to each bicycle.

Employees who use the bicycles will be automatically entered into a monthly drawing for small prizes relating to cycling (nutrition, safety gear, bicycle shop gift cards).

#### **Program Evaluation**

The goal of the program is to provide an easy to use bike sharing system with the intent that City employees would replace single occupant vehicle trips when going to lunch or commuting. Employees will be asked to track their bicycle usage on a simple log sheet. The data will be tabulated to demonstrate overall vehicle trip reduction, total miles travelled, and general success of the program. In addition, the coordinator will continually solicit user feedback to improve the program. Although the demonstration period for the program is only 6 months, the City intends on making this a permanent program and potentially expanding the number and locations for the bicycles if demand exists.

#### Problems Encountered / lessons learned

The program launched January 1, 2017. City held a bicycle safety workshop, distributed more than 30 helmets to staff, and tracked usage per the approved plan. The demonstration program concluded on June 30, 2017. During the evaluation period, employees made 101 trips, totalling 429 miles. In that timeframe, challenges arose including having bikes of varying sizes that accommodate a range of employee heights and having enough bicycles to meet demand. The City purchased two more bicycles of different sizes to meet the demand. An additional challenge was where to store the bicycles and how to maintain them. To address these issues, the City created an indoor cubicle space on the first floor of City Hall to keep the bicycles out of the weather and easily accessible and a regular bicycle rider on staff routinely provides the general maintenance. Lastly, there was concern of if the bicycle broke down while away from City Hall, how would the employee get back. A local bicycle shop agreed to provide a form of AAA service to solve the issue. If a malfunction occurs, the employee can call the shop and their staff will pick up the bike and return the employee to City Hall for a nominal charge. Overall maintenance of the bicycles and reducing work separation anxiety is vital to the success of the program.

#### **Emissions Benefits/Projections and Future Actions**

Studies have shown that on an average day, a car may take up to 5 miles to warm up and operate at maximum efficiency. In the warm-up period, vehicle emissions can be as much as 30 percent higher than normal operation. Considering the average trip length of less than 3 miles in this demonstration program, coupled with the cold starting nature of regular vehicles, significant GHG reductions have been realized. This program is a success and the City has made it permanent. The City will continue to promote the program through employee incentives and look to expand the bicycle fleet to satellite facilities as additional funding becomes available.

#### Conclusion

The MSRC's funding for this project furthered the City of Moreno Valley's dedication to supporting programs that improve air quality for the region and made the individual elements a success. We look forward to future MSRC funded programs that will enhance the quality of life for our residents and advance the goals and objectives of the City's General Plan for improved air quality and sustainability.

#### Photographs and Public Outreach

The City completed the following public outreach activities:

• Initial email blast to all City employees describing the Employee Bike Share Program -

Do you want to go to lunch, but don't want to give up your great parking space? Do you want to save money on gas, contribute to improved air quality, and get some exercise? Consider riding a bike!

As a means of implementing greener, more sustainable practices, the City is launching an Employee Demonstration Bike Share program. This is a 6-month program intended for employees to replace short single occupant vehicle trips when running personal errands, going to lunch, or commuting.

The City has purchased two Electric Assist Bikes (E-Bikes) which are easy to ride and very convenient. The Western Riverside Council of Governments (WRCOG) and the Mobile Source Air Pollution Reduction Review Committee (MSRC) provided funding for the bicycles.

To participate in the program, employees must sign a waiver and wear a helmet while riding the bicycles. Although not required, it is highly recommended that employees take a bicycle safety skills workshop and receive orientation on the use of the bicycles. The City will be bringing in a League Cycling Instructor (LCI) to teach a bicycle safety course on January 10<sup>th</sup> from 11:30 am to 1:30 pm in the Training Room. All participants will receive a free helmet and lunch will be provided. Eric Lewis, City Traffic Engineer, will provide orientation on the use of the bicycles.

Please RSVP to Eric Lewis, City Traffic Engineer at extension 3149.

This message has been approved by the City Manager's Office.

• Press Enterprise featured bike share program in news article:

http://www.pe.com/articles/city-825741-bike-lewis.html

#### LOCAL NEWS

How Moreno Valley is encouraging workers to use bikes (by providing the bike, for starters)







By Imran Ghori | ighori@scng.com and Imran Ghori | ighori@scng.com | The Press-Enterprise February 19, 2017 at 2:00 pm

As lunch approached, Eric Lewis and three co-workers at Moreno Valley City Hall stepped out for a bite.

But instead of getting into a car, they hopped on four bicycles for a short ride to the Towngate Shopping Center.

There was one more twist, aside from their mode of transportation. The bikes belong to the city.

In January, Moreno Valley began testing a bike-sharing program to encourage employees to drive less by instead riding a bicycle for short errands or lunch breaks.

"The use is growing as the weather improves," said Lewis, the city's traffic engineer.

With sunny skies and temperatures in the low 70s, one particular day was ideal for him and the other three to take a quick ride up Frederick Street to Jersey Mike's, where they locked the bicycles outside and went in for sandwiches.

The city bought two electric bicycles but last week had borrowed two more from a local store to test different sizes of bikes.

The bicycles come equipped with batteries and, at 50 pounds, are twice the weight of a normal bike, Lewis said. The battery gives riders a little extra help when they need it to supplement their pedaling.

They have three settings: full boost, eco-boost or no boost. With the electric assist, the bikes can reach speeds of up to 28 mph.

"As you pedal, the bike actually helps you," said Danny Astorga, a city construction inspector who joined Lewis for the ride. "That's when you really notice the difference."

Astorga has become one of the more avid devotees of the program. When weather permits, he has been using one of the bikes to commute to his home about 7 miles north of City Hall. During rush hour, the ride takes him only about five minutes longer than driving, he said.

Astorga said it has encouraged him to explore his neighborhood more and go out of his normal way instead of taking the same daily driving route.

"I'll take a 10-mile ride to get home because it's pretty fun," Astorga said.

Employees taking part in the program must sign a waiver and wear a helmet. The city brought in a cycling instructor to teach a bike safety course.

The bikes each cost \$2,500 and were part of \$65,600 in grants from the Western Riverside Council of Governments and the Mobile Source Air Pollution Reduction Review Committee for projects to make the city more bicycle-friendly.

The city's other projects include bike lanes that will be added on a 2-mile stretch of Ironwood Avenue, from Pigeon Pass Road to Perris Boulevard; 25 bicycle racks to be installed at businesses along Alessandro Boulevard; and flashing beacons at the crossing of the Juan Bautista Trail and Elsworth Street.

As part of the grant, the city agreed to try the program for six months. Lewis said officials hope to continue longer and expand after that.

Bicyclists keep track of each trip and log mileage so the city can gauge the program's success and determine how many car trips are saved, Lewis said.

Tim Carroll, the city's media and production supervisor, said he tries to use a bike once a week. Carroll, who drives a Toyota Prius, said he likes the program's environmentally friendly goal.

 May 17, 2017 article in <u>MoVal @Work</u> – a city-produced weekly publication distributed by email to City employees and approximately 34,500 residents:

### **City Expands its Bicycle Network**

The City installed Class II bike lanes on Ironwood Avenue from Pigeon Pass Road to Perris Boulevard. As part of the City's adopted Bicycle Master Plan, the new two-mile segment provides a vital link from surrounding residential neighborhoods to bus stops, schools, and commercial retail centers. Both commuters and recreational cyclists use the route extensively. The project involved removal of existing striping, installation of new striping, markings, and several continental-style crosswalks.

Grants from the Western Riverside Council of Governments (WRCOG) and the Mobile Source Air Pollution Reduction Review Committee (MSRC) funded the project and in-house forces provided the design and installation.





 April 20, 2018 article in <u>MoVal @Work</u> – a city-produced weekly publication distributed by email to City employees and approximately 34,500 residents:

### **Bicycle Safety Improved Throughout the City**

The City has completed a multi-faceted program intended to improve bicycle safety and mobility, and reduce single occupant vehicle trips.

The program included the installation of Class II bike lanes on Ironwood Avenue between Pigeon Pass Road and Perris Boulevard, installation of 25 bicycle racks at businesses, bus stops, and public buildings along Alessandro Boulevard, upgrading the Juan Bautista De Anza Trail crossing at Elsworth Street, and establishing an employee bike share at City Hall.



Grants received from the Western Riverside Council of Governments (WRCOG) and the Mobile Source Air Pollution Reduction Review Committee (MSRC) provided funding for the program.

Bike rack installation at bus stop

Bike racks installed near local restaurants with employee bike share





RRFBs installed at Elsworth Street and Juan Bautista De Anza Trail crossing



Employee Demonstration Bike Share Program MSRC Contract ML16078 - City of Moreno Valley Reporting Period 1/1/17 - 6/30/17

February

Reporting Month:

Instructions: Be sure to wear your helmet. Be sure to sign a waiver. See Eric Lewis for any questions. Have fun and enjoy the ride!

	Name	Today's Date	Did this Replace a Vehicle Trip? (Y or N)	Approximate Number of Miles Rode	Comments?
1	ERIC L.	2/1/17	Y	7,5	COMMUTE FROM HOME
2	Danny A	2/1/17	Y	10.0	Commute From Home
3	DAnni A	2/2/17	Y	10.0	Commute TO work
4	HOANG N	2-3-17	$\checkmark$	2	LUNCH
5	Josh F.	02-03-17	Y	2	Lunch
6	EPIC L	2/8/17	Y	2	23
7	JULIER V	2/8/17	Y	2	1/
8	Danny A	2/8/17	Y	$\otimes$	Commute TO HOME
9	DanielA	2/9/17	X	8	Commots To velock
10	Epic L.	2/13/17	Y	4	LUACH
11	DAMIA	2/12/17	4	4	Curlett
12	Mosallam A.	2/13/17	Y	4	Lunch
13	Josh F.	02-13-17	Υ΄	4	Lunch
14	Guy P	2/16/17	Ý	2	LUNCH
15	Juned V	2/17/17	Y	2	LUNCH

4 2

5