



## Item No. 14 Town of Atherton

### **CITY COUNCIL STAFF REPORT – CONSENT AGENDA**

**TO: HONORABLE MAYOR AND CITY COUNCIL  
GEORGE RODERICKS, CITY MANAGER**

**THROUGH: MICHAEL KASHIWAGI, COMMUNITY SERVICES DIRECTOR**

**FROM: MARTY HANNEMAN, CITY ENGINEER**

**DATE: SEPTEMBER 21, 2016**

**SUBJECT: AMEND THE PEDESTRIAN AND BICYCLE MASTER PLAN TO  
DESIGNATE PORTIONS OF OAK GROVE AVENUE AS A CLASS  
II BIKE ROUTE**

### **RECOMMENDATION**

Accept the attached amendment to the Atherton Bicycle and Pedestrian Master Plan (BPMP) to:

- Designate Oak Grove Avenue, between Laurel Street and Middlefield Road (within Town limits) as a Class II route; and
- Remove the Class II bike route designation on Glenwood Avenue between Laurel Street and Middlefield Road.

### **BACKGROUND**

In November 2014, Atherton City Council accepted the Atherton Bicycle and Pedestrian Master Plan. The Master Plan identified the need for safe pedestrian and bicycle facilities and recommended priority projects. In March 2015, the Town authorized Mark Thomas & Company (MTCO) to study and develop preliminary engineering concepts and cost estimates for Class I and Class II bicycle facilities as well as pedestrian accommodations.

The purpose of this study was to:

- Identify constraints for implementation of the priority bicycle and pedestrian improvements included in the BPMP;
- Evaluate the feasibility of the routes selected and identify potential improvements to overcome the constraints; and
- Prepare conceptual cost estimates to seek funding.

## **The Pedestrian and Bicycle Master Plan Amendment**

**September 21, 2016**

**Page 2 of 3**

In the BPMP, Oak Grove Avenue between Laurel Street and Middlefield Road is currently not designated as a bike facility. As part of their scope of work, MTCO was asked to evaluate whether it is beneficial to designate Oak Grove Avenue within these limits as a bike route. The findings and recommendations are included in the February 4, 2016 MTCO memorandum (Attachment 1).

The recommendation to designate Oak Grove Avenue, between Laurel Street and Middlefield Road as Class II Bike route was presented to the Town of Atherton Bicycle and Pedestrian Committee at its April 28, 2016 meeting and was unanimously supported and approved.

### **FINDINGS/ANALYSIS**

There are currently two east-west bike routes east of Middlefield Road; Marsh Road and Ringwood Avenue. Users can travel along the Encinal Avenue bike lane to reach Marsh Road or Encinal Elementary. MTCO evaluated two possible east-west bike routes to connect the Valparaiso Avenue bike lane to the Ringwood bike lane: Glenwood Avenue and Oak Grove Avenue. Ravenswood Avenue is an existing Class II facility.

Glenwood Avenue provides the most direct connection from Valparaiso Avenue to Middlefield Road. Glenwood Avenue is currently designated as a Class II facility in the BPMP. To access Glenwood Avenue, bicyclists have to cross Middlefield Road at an uncontrolled crossing to the Lindenwood neighborhood. Glenwood Avenue is approximately 25-foot wide, which is not enough to accommodate a Class II facility (dedicated). To accommodate a Class II facility, a minimum width of 28 feet is needed (two 10-foot lanes with two 4-foot bike lanes). There are large trees in proximity to the edges of pavement. Pavement widening will likely result in the loss of parking, relocation of signs, and modification of landscaping.

Glenwood Avenue offers less interaction between bicyclists and motor vehicles (fewer crossing of vehicular lanes), bicyclists currently choose Oak Grove Avenue over Glenwood Avenue by a significant margin for their east-west maneuvers. This is due to the direct link Oak Grove Avenue provides between major destinations in the area (downtown Menlo Park, Caltrain station, and Menlo-Atherton High School). Despite the higher bicycle volumes on Oak Grove Avenue, evaluation of accident records does not indicate any markedly higher frequency of bicycle-involved collisions on Oak Grove Avenue compared to the other alternate routes. In addition, Menlo Park's BPAC has proposed designating Oak Grove Avenue as a Class II facility.

In consideration of the above factors, staff recommends the following:

- Designate Oak Grove Avenue, between Laurel Street and Middlefield Road (within Town limits) as a Class II route; and
- Remove the Class II bike route designation on Glenwood Avenue between Laurel Street and Middlefield Road.

### **POLICY FOCUS**

Amending the Bicycle and Pedestrian Master Plan continues the Council's focus on enhancement

## **The Pedestrian and Bicycle Master Plan Amendment**

**September 21, 2016**

**Page 3 of 3**

of the use Town streets as bicycle routes and seeks to improve safe routes to school. Physical improvements will be prioritized within the Town's Capital Improvement Program.

### **FISCAL IMPACTS**

The Council has approved \$200,000 in the Capital Improvement Program (CIP) for the integration of Oak Grove Avenue within town limits as a Class II facility for fiscal year 2017/18.

### **PUBLIC NOTICE**

Public notification was achieved by posting the agenda, with this agenda item being listed, at least 72 hours prior to the meeting in print and electronically. Information about the project is also disseminated via the Town's electronic News Flash and Atherton Online. There are approximately 1,200 subscribers to the Town's electronic News Flash publications. Subscribers include residents as well as stakeholders – to include, but be not limited to, media outlets, school districts, Menlo Park Fire District, service providers (water, power, and sewer), and regional elected officials.

### **ATTACHMENTS**

Attachment 1: Mark Thomas & Company February 4, 2016 Memorandum



# Memorandum

To: Andrew Poster, PE, TE  
 Town of Atherton Project Manager File: SJ-15107

From: Admas Zewdie, PE

Date: February 4, 2016

RE: Atherton BPMP: Consideration of Oak Grove Avenue for a bike route

## PURPOSE

In the Bicycle and Pedestrian Master Plan (Master Plan) prepared by the Town of Atherton in 2014, Oak Grove Avenue between Laurel Street and Middlefield Road is not designated as a bike facility. In this memorandum, we evaluate whether it is beneficial to designate Oak Grove Avenue within these limits as a bike route.

### A. Background

West of Laurel Street, Valparaiso Avenue serves as a primary east-west facility designated for bike travel. East of Middlefield Road, Ringwood Avenue serves the same purpose (see Figure 1). Encinal Avenue, Glenwood Avenue, Oak Grove Avenue and Ravenswood Avenue are all east-west streets that connect Laurel Street and Middlefield Road. In this area, the Menlo Park/Atherton jurisdictional boundary zigzags between Laurel Street and Middlefield Road, crossing the above streets at varying distances between these two north-south streets. Approximately two-thirds of Oak Grove Avenue between Laurel Street and Middlefield Road is within the

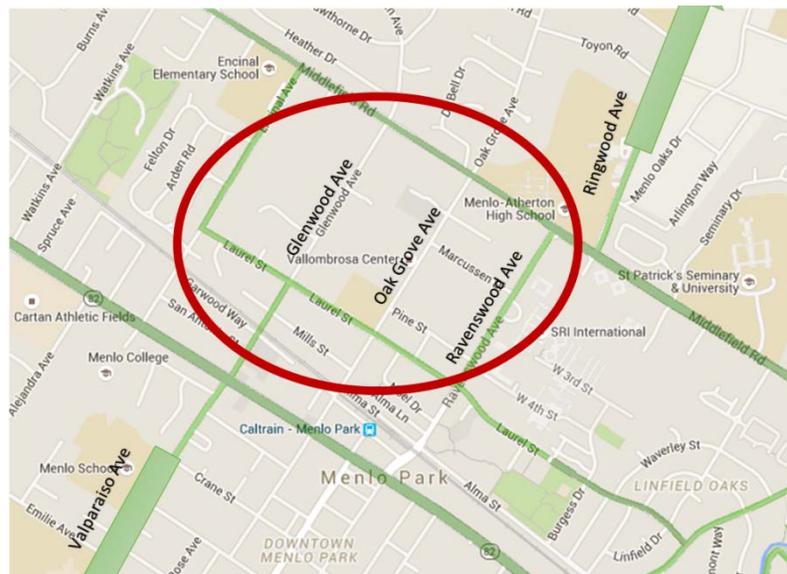


Figure 1 - Existing and Proposed Bicycle Network

Menlo Park city limits. Both municipalities identify Encinal Avenue and Ravenswood Avenue as existing Class II bike facilities. However, the bicycle circulation plans for the two municipalities show some inconsistencies. The Atherton Master Plan only shows Glenwood Avenue as a proposed bike facility

(Class II) since it is entirely within Atherton. Menlo Park’s Bike/Ped Master Plan shows Oak Grove Avenue as a Class III facility. However, the Menlo Park’s Bicycle Pedestrian Advisory Committee (BPAC) has presented a proposal to the Transportation Commission to designate Oak Grove Avenue as a Class II facility. The Transportation Commission had no objection on the proposal.

**B. Description of Alternative East-West Routes**

The only two east-west bike routes are Marsh Road and Ringwood Avenue. Users can travel along the Encinal Avenue bike lane to reach Marsh Road or Encinal Elementary. We have evaluated two possible east-west bike routes to connect the Valparaiso Avenue bike lane to the Ringwood bike lane: Glenwood Avenue and Oak Grove Avenue. Ravenswood Avenue is an existing Class II facility. We have included it in this evaluation to assess whether either of the above two potential routes offer a better choice for bicyclists than this existing facility. These three routes are depicted in Figure 2 below.



Figure 2 - Potential East-West Bike Routes between Laurel Avenue and Middlefield Road

**1. Glenwood Avenue**

Glenwood Avenue provides the most direct connection from Valparaiso Avenue to Middlefield Road. Glenwood Avenue is designated as a Class II facility in the Bicycle Pedestrian Master Plan. To access Glenwood Avenue, bicyclists have to cross Middlefield Road at an uncontrolled crossing to the Lindenwood neighborhood. Glenwood Avenue is approximately 25 foot wide (see Figure 3), which is not enough to accommodate a Class II facility. To accommodate a Class II facility, a minimum width of 28 feet is needed (two 10-foot lanes with two 4-foot bike lanes). There are large trees in proximity to the edges of pavement. Pavement widening will likely result in the loss of parking, relocation of signs, and modification of landscaping. Glenwood Avenue can be designated as a Class III facility without any widening.



Figure 3 - Glenwood Avenue (Facing East)

**2. Oak Grove Avenue**

Oak Grove Avenue currently serves as the primary vehicular access to/from the west to the Menlo-Atherton High School passenger-loading zone. In addition, two bus stops near Middlefield Road serve the high school students. The Oak Grove Avenue/Middlefield Road intersection is signalized, with crosswalks across all four legs. The Town is in the initial design stages of a project to improve bicycle/pedestrian access at this intersection.

Oak Grove Avenue has a pavement width of 34 feet with two 3 foot valley gutters. Approximately 800 feet of Oak Grove Avenue immediately west of Middlefield Road is within Town limits; the remaining segment is within Menlo Park city limits. Within Atherton, parking is allowed on both sides of the street. West of Laurel Street, Menlo Park plans to remove parking on one side of Oak Grove Avenue to accommodate bike lanes without widening the road. Between Laurel Street and the city limits near Middlefield Road, Menlo Park’s BPAC has proposed designating Oak Grove Avenue as a Class II facility.

Oak Grove Avenue, within Atherton town limits, can be converted to a Class II facility by removing parking between Laurel Street and the Middlefield Road Intersection approach. Near the intersection with Middlefield Road, there is not sufficient width to accommodate Class II lanes due to the presence of a left-turn lane. There are two options to accommodate cyclists:

- **Option 1:** Widen the pavement to accommodate a Class II facility. By removing the valley gutter, the pavement can be widened to accommodate 10-foot vehicular lanes and 4-foot bike lanes without the need to remove trees. Any additional widening would require removal of trees and relocation of Overhead/Underground utilities.
- **Option 2:** Make the intersection into a Class I/III facility. On both sides of Oak Grove Avenue, five-foot wide side paths can be added between the line of trees and the fence to provide separate facilities for pedestrians and bicyclists. The path will be ADA compliant and act as a sidewalk and staging area at the intersection. This can be supplemented with a Class III designation on the through lanes.



Figure 4 - Oak Grove Avenue (Facing East)

Table 1: Preliminary Cost Comparison

	<b>OPTION 1 Widen to 4' Class II Bike lane with 10' vehicle lanes</b>	<b>OPTION 2 Add 5' side path and Sharrows</b>
<b>New pavement area</b>	Six feet of widening for approximately 260 feet	10 feet of new pavement for approximately 260 feet
<b>Roadway Excavation (CY)</b>	75	125
<b>Striping (LF)</b>	520	0
<b>Marking (EA) (10 SF)</b>	2	4
<b>Asphalt Concrete (SF)</b>	1566	2601
<b>Aggregate Base (CY)</b>	56	93
<b>Valley Gutter Removal (LF)</b>	520	0
<b>Driveway Modification (EA)</b>	3	3
<b>Green Thermoplastic Paint (SF)</b>	400	0
<b>Pullbox Adjust to Grade (EA)</b>	0	4
<b>Storm Drain Modification (EA)</b>	1	0
<b>APPROXIMATE COST</b>	<b>\$60,000 - \$65,000</b>	<b>\$55,000 - \$60,000</b>

**3. Ravenswood Avenue**

Ravenswood Avenue has pedestrian facilities and a buffered Class II bike lane. The bike lane provides the most convenient access to/from the southwest to the central bike parking on the high school campus. Ravenswood Avenue has sidewalks and traffic signals. Ravenswood Avenue carries users to Downtown Menlo Park.

Ravenswood Avenue has a curb to curb width of 44 feet which includes 6-foot bike lanes and 2-foot buffers.



*Figure 5 - Ravenswood Avenue (Facing East)*

**C. Comparison of Alternatives**

We used the following factors to compare the alternatives:

**1. Vehicular Conflict Points**

The potential for conflict with motor vehicles was compared by counting the number of through vehicular lanes that bicyclists will need to cross to traverse between Valparaiso Avenue and Ringwood Avenue using the three alternative east-west routes shown in Figure 2. These counts are shown in Table 2. For these counts, we assumed that bicyclists would make two-stage left turns at intersections (similar to pedestrians). Fewer lane crossings are preferable. The table also shows the number of turns bicyclists will need to perform to traverse between Laurel Street and Middlefield Road. Fewer turns are preferable.

*Table 2 - Potential Vehicular Conflict Points*

<b>Route</b>	<b>No. of Lanes Crossed at Intersections (Eastbound)</b>	<b>No. of Lanes Crossed at Intersections (Westbound)</b>	<b>TOTAL NO. OF LANES Crossed at Intersections</b>	<b>NUMBER OF TURNS</b>
<b>GLENWOOD AVENUE</b>	13	11	24	2
<b>OAK GROVE AVENUE</b>	17	10	27	4
<b>RAVENSWOOD AVENUE</b>	19	14	33	4

Glenwood Avenue crosses the fewest number of lanes and requires the fewest turns to travel between the two east-west arterials.

## 2. Traffic Count

The Town performed bicycle traffic counts in September 2015 at two intersections – Glenwood Avenue/Middlefield Road and Oak Grove Avenue/Middlefield Road. The 24-hour bicycle count data was consolidated to show the number of cyclists riding to and from Middlefield Road (Figure 6). The count data suggests that most bicyclists choose Oak Grove Avenue over Glenwood Avenue for their east-west travels. Some possible reasons include:

- There is a signalized crossing at the Oak Grove Avenue/Middlefield Road intersection, but not at the Glenwood Avenue/Middlefield Road intersection;
- Oak Grove Avenue provides a direct connection between two potentially significant generators of bicycle traffic – downtown Meno Park and Menlo-Atherton High School;
- Oak Grove Avenue serves as the primary access point to the Caltrain station.

Review of traffic count data suggests that Oak Grove Avenue experiences slightly higher traffic volumes than Glenwood Avenue.<sup>1</sup>

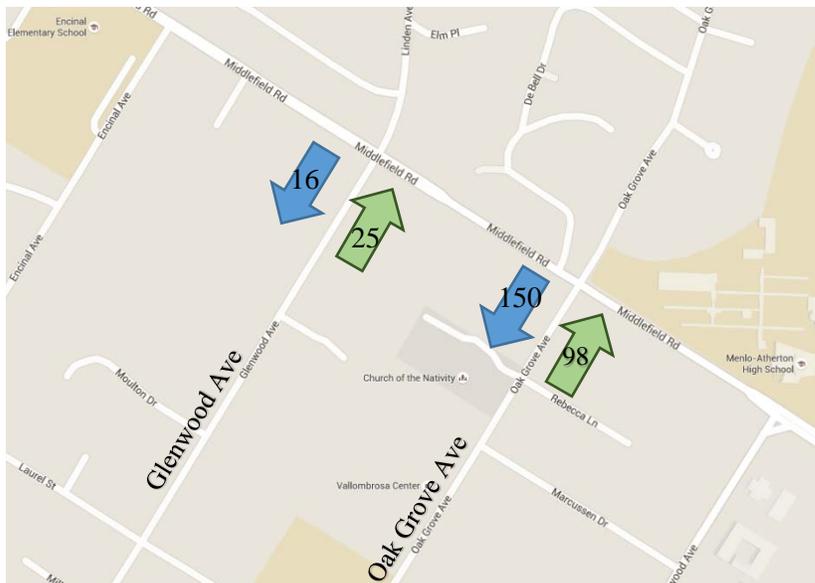


Figure 6: Bicycle riding towards Middlefield Rd (Green) and away from Middlefield Rd (Blue)

## 3. Accident Data

Accident data was generated from the UC Berkeley Traffic Injury Mapping System (TIMS). Accidents involving motor vehicles and bicyclists on both sides of the streets were counted along the three routes during a 10-year period (January 1, 2004 to December 31, 2013) (see Table 3).

<sup>1</sup> Average Daily Traffic (ADT) on Oak Grove Avenue is 4,800 (2014 count by Menlo Park; ADT on Glenwood Avenue is 4,300 (2015 count by Atherton)

Table 3- Accident Counts

ROUTE	NO. OF MOTOR VEHICLE - BICYCLE ACCIDENTS
GLENWOOD AVENUE	12
OAK GROVE AVENUE	11
RAVENSWOOD AVENUE	11

The accident data does not reflect meaningful variation between the three routes. Oak Grove Avenue/Middlefield Road and Glenwood Avenue/Middlefield Road intersections had five bicycle accidents each during the 10-year period.

#### D. Summary and Recommendation

Although Glenwood Avenue offers less interaction between bicyclists and motor vehicles (fewer crossing of vehicular lanes), bicyclists currently choose Oak Grove Avenue over Glenwood Avenue by a significant margin for their east-west maneuvers. This is probably due to the direct link Oak Grove Avenue provides between major destinations in the area (downtown Menlo Park, Caltrain station, and Menlo-Atherton High School). Despite the higher bicycle volumes on Oak Grove Avenue, evaluation of accident records does not indicate any markedly higher frequency of bicycle-involved collisions on Oak Grove Avenue compared to the other alternate routes. In addition, Menlo Park's BPAC has proposed designating Oak Grove Avenue as a Class II facility.

In consideration of the above factors, we recommend the following:

- Designate Oak Grove Avenue, within Town limits, as a Class II route. This will require coordination with the City of Menlo Park to maintain continuity of the Class II facility west of the Town limits. It should be noted that such a designation requires the removal of parking and pavement widening near the intersection with Middlefield Road.
- Should removal of parking be unpalatable to the community, or if the widening is determined not to be feasible, designate Oak Grove Avenue as a Class III facility and implement traffic calming measures, such as striping/ sharrow, to increase safety and comfort for bicyclists. In conjunction with the Class III designation, we recommend that separate 5-foot wide paths be provided in the space between the lines of trees and the property lines near Oak Grove Avenue's intersection with Middlefield Road.
- If either of the above alternatives are implemented, do not designate Glenwood Avenue as a bike route.
- If neither of the above alternatives are deemed feasible on Oak Grove Ave, then we recommend Glenwood Ave be converted into a Class III route.