San Luis Obispo County Bicycle Advisory Committee
Agenda - Tuesday, February 9th, 2016 at 6:00 p.m.
San Luis Obispo County Government Center
1055 Monterey Street Room 161/162
San Luis Obispo CA 93408

The Bicycle Advisory Committee promotes the expanded use of bicycle transportation by working together with County staff to develop the County Bikeways Plan, reviewing the Plan and presenting a recommendation to the Board of Supervisors for its adoption; by reviewing the policies and programs related to bicycling in the Circulation Element of the County General Plan and Local Coastal Plan and making recommendations on the goals and their implementation to the Board of Supervisors; and by reviewing the policies and programs related to bicycling in the Bikeways Element of the Regional Transportation Plan and providing input to the Board of Supervisors on the goals and their implementation.

1. Call to order/ Thank you
2. Recognize Members and Guests
3. Roll Call/Contact List
4. Public Comment
   Members of the audience wishing to address the Board on pertinent matters other than scheduled agenda items may do so at this time when recognized by the Chair. Upon recognition by the Chair, please state your name and address. Comments are limited to three minutes. In accordance with the Brown Act, the Board cannot discuss any matter unless it is listed on the agenda, but may agendize such matters for consideration at a future meeting.
5. Reports
   I. County Parks
   II. SLOCOG
   III. County Public Works
      i. Sign, striping, and overlay updates
      ii. Sharrow Requests
   IV. County Planning
   V. BAC Chairperson
   VI. Caltrans

6. Presentations
   A. SLOCOG Prioritizing Projects for the Regional Transportation Plan, Transportation Funding – Flint Consulting
   B. Caltrans US 101 North Paso Rehab Project – Amy Donatello from Caltrans

7. BAC Business & Discussion
   C. Minutes of 11/10/2015
   D. Bikeway Class Modifications (Ardath Drive, Burton Drive, K Street, San Luis Obispo Road)
   E. Bike Plan
      a. Public Review Draft
      b. Schedule

8. Future Agenda Items
   H. Avila Beach Drive Interchange Improvements – Caltrans
   I. Oceano Revitalization Plan – Public Works


Agendas and Minutes are available on the web @ http://www.slocounty.ca.gov/PW/Traffic/BAC
6. **Presentations**

   A. **SLOCOG Prioritizing Projects for the Regional Transportation Plan, Transportation Funding**  
      - Flint Consulting  
      *Recommendation: Receive report and provide input.*  
      
      Discussion: Presentation to be provided at meeting.

      Results: Update RTP with project priorities and funding plan.

   B. **Caltrans US 101 North Paso Rehab Project** – Amy Donatello from Caltrans  
      *Recommendation: Receive report and provide input.*  
      
      Discussion: Project fact sheet attached. Project manager to be in attendance.

      Results: Receive public input on proposed bike closure.
US 101 TEMPORARY CLOSURE FOR BICYCLISTS PLANNED

During construction of this project, Caltrans plans to close eight miles of US 101 to bicyclists from just south of San Marcos Creek Bridge, near the San Miguel community, in San Luis Obispo County to just south of the East Garrison overcrossing, south of Bradley, in Monterey County. Bicyclists are expected to use alternate routes until the project is completed.

TEMPORARY CLOSURE TIMEFRAME

Start – Fall 2016
End – Fall 2018

PUBLIC INPUT

Caltrans invites public input on this closure. Once we receive all the comments, we will notify the public on the next steps.
PROJECT PURPOSE
The purpose of the project is to prevent further deterioration of the pavement and reduce the cost of future maintenance, while upgrading the facility to current Caltrans standards.

ESTIMATED CONSTRUCTION COST
$56 million – State Highway Operation and Protection Program (SHOPP) funding

MAJOR PROJECT FEATURES
- Reconstruct 8 miles of US 101 in both directions.
- Realign South San Miguel (Mission Street) southbound on-ramp, so it merges to the right side of the through traffic instead of the left:
  - Construct new bridge within the realigned section adjacent to existing northbound bridge.
  - Construct retaining wall approximately 650 feet in length and with a variable height of 5 to 12 feet to the right side of the new ramp.
  - Southbound South San Miguel (Mission Street) on-ramp closure for about 9 months. Access will be permitted through 10th Street and Cemetery Road to existing southbound on-ramp at the end of Cemetery Road.
- Replace US 101 northbound and southbound San Marcos Creek bridges:
  - During construction, reduce northbound and southbound lanes to one lane in each direction over the San Marcos Creek for about 12 months.
- Widen the highway’s outside shoulders from 8 to 10 feet, and inside from 2 to 5 feet.
- Achieve minimum clearance height under US 101 by lowering the roadway beneath the following undercrossings: South San Miguel (Mission Street), 10th Street, southbound north San Miguel and Camp Roberts overhead.
- Install new and/or upgrade existing guardrail.
- Reconstruct drainage and ramp systems.
- Install lighting at the on/off ramps in 5 locations.
- Provide an additional 20 years of facility service life.

LANE CLOSURES
During construction, daily periodic lane closures on US 101 in both directions are expected within the project limits. One lane will remain open in each direction at all times.

PROJECT SCHEDULE
Construction Start – Fall 2016
Construction Complete – Fall 2018

SUBMIT COMMENTS BY TUESDAY, FEB. 9, 2016
Caltrans Project Manager Amy Donatello
50 Higuera Street
San Luis Obispo, CA 93401
805-549-3014
Amy.donatello@dot.ca.gov
7. **BAC Business & Discussion**

**A. Minutes of 11/10/2015**

_**Recommendation:** Approve the Minutes of the 11/10/2015 BAC meeting._

Discussion: Minutes have been prepared and are attached.

Results: Adopted minutes will be placed on website and become part of public record.

**B. Bikeway Class Modifications**

_**Recommendation:** Designate Class III Bike Route on:_

- Ardath Drive from Highway 1 to Madison Street
- Burton Drive from Highway 1 to Ardath Drive
- K Street from Tenth Street to San Luis Obispo Road
- San Luis Obispo Road from K Street to Mission Street

Discussion:

- Ardath Drive from Highway 1 to Madison: Currently no bikeways are identified in the southwest quadrant of Cambria. Proposed Class III will designate route from Highway 1 to Madison Street where road forks. HDM language included. Ardath is a 30mph road with a centerline and lower than average collision rate. Other roads in the area do not provide direct access and many are unpaved. BAC has driven route since November 2016 meeting.
- Burton Drive from Highway 1 to Ardath Drive would provide continuity between the existing Class III on Burton north of Highway 1 and Ardath Drive (if designated).
- K Street/San Luis Obispo Road (10th Street to Mission Street): Per request of San Miguel Advisory group designate K Street and San Luis Obispo Road as Bike Routes. Currently there is a proposed Class II on 10th Street. Advisory group believes this is too steep. Staff is proposing to keep the future Class II and provide an alternate Bike Route with lesser topography.

Results: Reclassification of these bikeways will facilitate a complete bicycle network leading to a safe and livable community.

Visit [http://www.slocounty.ca.gov/PW/Bicycles.htm](http://www.slocounty.ca.gov/PW/Bicycles.htm) for Bicycle Advisory Committee information, the SLO County Bike Plan and to submit bicycle requests.
San Luis Obispo County Bicycle Advisory Committee  
DRAFT Minutes - Tuesday, November 10\textsuperscript{th}, 2015 at 6:00 p.m.  
San Luis Obispo County Government Center  
1055 Monterey Street Room 161/162  
San Luis Obispo CA 93408

1. **Call to order/ Thank you**  
Josh Olejczak called the meeting to order.

2. **Recognize Members and Guests**  
New District 5 member Claudia Callwood was in attendance.

3. **Roll Call/Contact List**

**BAC Members:** Robert Davis, Ed Goshorn, Bill Kennedy (ABSENT), Ken Price, Josh Olejczak, Claudia Callwood, Skip Amerine, William Van Orden (ABSENT), Dale Sutliff, Michael McMahon (ABSENT)

**Staff Present:** Michelle Matson (PW Secretary), Shaun Cooper (County Parks and Recreation), Jeff Brubaker (SLOCOG), Dave Flynn (PW),

**Trail Committee Members/Staff Present:** Shelia Patterson, Patty Fuller, Kathy Longacre, Greg Bettencourt, Carolyn Huddleston, Dorothy Jennings, Kelli Schonher, Helene Finger, Larry Iaquinto (County Parks and Recreation)

4. **Public Comment**  
Kathy Longacre from the Trails Committee mentioned Forrest Service agreement on HI Mountain Road to allow continued use as a Trail. Trails Committee is writing letter of support for County to come to Joint Agreement for maintenance.

5. **Reports**

A. **County Parks**  
Shawn Cooper provided updates on the Chorro valley trail. SLOCOG completed feasibility study in 2014. Camp San Luis has come forward to allow an easement for the trail on eastside of Highway 1. The SLOCOG study is on their website.

Bob Jones Pathway working on updating NEPA document which should be done by end of 2015. Then can proceed with ROW. The new section of the Bob Jones Trail is a higher priority than widening the existing trail.

Anza Trail from Santa Margarita to Garden Farms, went to Planning commission for conformity report. To go to BOS in 2016 to accept easement.

Construction documents for Templeton to Atascadero will be ready in 2017, will have construction ready documents.

B. **SLOCOG**  
Jeff Brubaker noted the Anza Trail Edna - Price Canyon feasibility study is currently out for public comment. To be adopted by SLOCOG in February of 2016.

SLOCOG working on ATP Plan to prioritize funding of bicycle and pedestrian projects.

C. **County Public Works**  
Michelle Matson noted that the County did not receive any grant money for ATP. Public Works has also submitted an HSIP grant for Los Berros Road. Jeff Brubaker noted the City of San Luis Obispo received a grant for the Railroad Safety Trail. SLOCOG also received a Safe Routes to School Education Grant.

Agendas and Minutes are available on the web @ http://www.slocounty.ca.gov/PW/Traffic/BAC
Crews have continued to stripe the bike lanes in Los Osos. Will monitor for parking compliance. Michelle is working toward sharrow evaluation and 3 FT to PASS signs.

6. **Trails Committee Discussion**
   A. **Class I Standards**
   Skip provided background information on proposed trail rules and read the proposed rules. Rules would apply to Class I Bikeways by definition. Kathy Longacre questions where the rules would be posted and what trails they would go on but supports developing a set of rules. Claudia Callwood questioned how trails could be for experienced users. Dorothy Jennings noted vehicle code allows horses for travel and Parks and Recreation Element has some rules. Trails committee also noted bicycle riders are not a homogenous group.

   Michelle Matson noted history of the rules. They were developed by a BAC subcommittee as part of the 2015 Bike Plan goal development. Staff did not prepare the rules and would only support rules supported by both committees. Staff suggests trails committee review and provide comment. Robert Davis suggested a subcommittee.

   B. **Bikeway Rankings**
   Staff provided the adopted Bike Plan Bikeway ranking as an informational item.

   C. **ATP Committee**
   Staff has suggested that an ATP committee be developed for the County to move forward with common bike and pedestrian priorities for grant funding. Robert Davis and Skip from the BAC volunteered. Trails committee to discuss at next meeting in January.

7. **BAC Business & Discussion**
   D. **Minutes of 8/11/2015**
   Dale Sutliff motioned to approve the minutes with the correction to the attendance of Barry Lewis. Jeff Brubaker also clarified the SLOCOG updates. Robert Davis seconded. Motion approved.

   E. **BAC Elections**

   F. **2016 BAC Calendar**
   Dorothy Jennings noted that 11/8/16 is Election Day. Skip motioned to adopt 2/9/16, 5/10/16, 8/9/16 and 11/15/16 as the BAC calendar. Ed seconded. Motion approved unanimously.

   G. **Bikeway Class Modifications**
   Staff reviewed bikeway class modifications, Ardath is new request from a Cambria bicycle group. Staff is not recommending sharrows as requested but can designate as a Class III Bike Route. BAC is unfamiliar with route and will drive route before next meeting.

   Ed moved to accept all the bikeway class modifications except Ardath Drive from Highway 1 to Madison Street. Skip seconded. All in favor.

   H. **Bike Plan**
   Discussed draft of bike plan. Dorothy Jennings commented that section on complete streets should be included. Dale Sutliff suggested an executive summary. No action taken. Comments due to Michelle Matson by 11/30/15.

8. **Future Agenda Items**

9. **Next meeting – February 9, 2016**
C. Bike Plan

**Recommendation**
- Receive hard copy of BAC Draft of Bike Plan (to be updated based on meeting action prior to uploading for public review on website)
- Review Advisory committee schedule

Discussion: A hard copy of the bike plan will be provided at the meeting. Public Works will revise the plan based on BAC action in Item D and upload Public Review Draft to the website and send out the comment letter. Asking that BAC members attend respective advisory committee for input. Advisory committee schedule is attached.

No comments following the November meeting were received on the administrative working draft. Goals were further edited/refined, intention was not to delete any.

Public Works currently completing budget. Chapter 7 to be updated prior to final plan.

Tentative Schedule:
- 2/11/2016: Release public review draft online.
- 3/2016: BAC members to attend area advisory committees.
- 5/10/2016: May BAC Meeting (Act on any comments received as needed and Recommend adoption of Bike Plan to BOS)
- 7/2016: Approval of Bike Plan by BOS.

Results: Approval of the recommended action will update the County’s bicycle transportation framework, enhancing the opportunity for alternative transportation modes, provides for more traffic and bicycling safety, and creates a more livable community.
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<tr>
<th>Council</th>
<th>Chair Contact</th>
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<tr>
<td>Avila Valley Advisory Council</td>
<td><a href="mailto:runhartig@gmail.com">runhartig@gmail.com</a></td>
<td><a href="http://avac-avila.org/">http://avac-avila.org/</a></td>
<td>2nd Monday at 7:00 PM</td>
<td>Ontario Road, San Luis Obispo, CA</td>
</tr>
<tr>
<td>Bicycle Advisory Council</td>
<td>Dale Sutliff <a href="mailto:dalesutliff@me.com">dalesutliff@me.com</a></td>
<td><a href="http://www.slocounty.ca.gov/PW/TrafficBAC.htm">http://www.slocounty.ca.gov/PW/TrafficBAC.htm</a></td>
<td>2nd Tuesday of Feb, May, Aug and Nov</td>
<td>County Government Center Room 161/162</td>
</tr>
<tr>
<td>Cayucos Citizens Advisory Council</td>
<td><a href="mailto:jcarsel@aol.com">jcarsel@aol.com</a></td>
<td><a href="http://www.cayucos-ccac.org/">http://www.cayucos-ccac.org/</a></td>
<td>1st Wednesday at 7:00 PM</td>
<td>Cayucos Vet's Hall at the foot of the Pier</td>
</tr>
<tr>
<td>Creston Advisory Body</td>
<td><a href="mailto:salyons@airspeedwireless.net">salyons@airspeedwireless.net</a></td>
<td><a href="http://crestonadvisorybody.net/cab/CA_B_Home.html">http://crestonadvisorybody.net/cab/CA_B_Home.html</a></td>
<td>3rd Wednesday at 7:00 PM</td>
<td>South Bay Community Center small conference room</td>
</tr>
<tr>
<td>Los Osos Community Advisory Council</td>
<td><a href="mailto:vickilocacchair@earthlink.net">vickilocacchair@earthlink.net</a></td>
<td><a href="http://ilocac.info/">http://ilocac.info/</a></td>
<td>4th Thursday 7pm</td>
<td>South Bay Community Center small conference room</td>
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<tr>
<td>Los Osos Community Advisory Council - Traffic and Circulation Committee</td>
<td><a href="mailto:jllocac@gmail.com">jllocac@gmail.com</a></td>
<td><a href="http://ilocac.info/">http://ilocac.info/</a></td>
<td>2nd Tuesday at 6:30 PM</td>
<td>Rabobank Community Room 1070 Main St., Cambria</td>
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<tr>
<td>North Coast Advisory Council</td>
<td><a href="mailto:thefoz@att.net">thefoz@att.net</a></td>
<td><a href="http://northcoastadvisorycouncil.org/">http://northcoastadvisorycouncil.org/</a></td>
<td>3rd Wednesday at 6:30 PM</td>
<td>Rabobank Community Room 1070 Main St., Cambria</td>
</tr>
<tr>
<td>North Coast Advisory Council - Traffic and Circulation Committee</td>
<td><a href="mailto:jllocac@gmail.com">jllocac@gmail.com</a></td>
<td><a href="http://ilocac.info/">http://ilocac.info/</a></td>
<td>1st Monday at 3:00pm</td>
<td>Rabobank Community Room 1070 Main St., Cambria</td>
</tr>
<tr>
<td>Oceano Advisory Committee</td>
<td><a href="mailto:vemdaah@yahoo.com">vemdaah@yahoo.com</a></td>
<td><a href="http://www.oceanoadvisorycouncil.org/">http://www.oceanoadvisorycouncil.org/</a></td>
<td>4th Monday at 4:00 PM</td>
<td>Oceano CSD Boardroom 1655 Front Street Oceano, CA 93445</td>
</tr>
<tr>
<td>Safe Routes to School Task Force</td>
<td><a href="mailto:ssanders@rideshare.org">ssanders@rideshare.org</a></td>
<td><a href="http://www.rideshare.org/programs/SafeRouteToSchool.aspx">http://www.rideshare.org/programs/SafeRouteToSchool.aspx</a></td>
<td>Varies</td>
<td>SLOCOG Conference Room, San Luis Obispo</td>
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<tr>
<td>San Miguel Advisory Council</td>
<td><a href="mailto:mconger@co.slo.ca.us">mconger@co.slo.ca.us</a></td>
<td><a href="https://www.facebook.com/SLOPlannin">https://www.facebook.com/SLOPlannin</a> g/posts/10153408620555038</td>
<td>4th Wednesday at 7:00 PM</td>
<td>Community Center by 13th and K Streets in San Miguel, CA</td>
</tr>
<tr>
<td>Santa Margarita Area Advisory Council</td>
<td><a href="mailto:joe.smaac@gmail.com">joe.smaac@gmail.com</a></td>
<td><a href="http://www.smaaconline.org/">http://www.smaaconline.org/</a></td>
<td>1st Wednesday at 7:00 PM. (excld Jan &amp; Jul)</td>
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<td>Shandon Advisory Council</td>
<td><a href="mailto:shandoncouncil@yahoo.com">shandoncouncil@yahoo.com</a></td>
<td><a href="http://www.slocog.org/">http://www.slocog.org/</a></td>
<td>1st Wednesday at 7:00 PM</td>
<td>C.W. Clarke Memorial Park Clubhouse, Centre St, Shandon</td>
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<td>SLOCOG Conference Room, San Luis Obispo</td>
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<tr>
<td>South County Advisory Council</td>
<td><a href="mailto:saries4u@gmail.com">saries4u@gmail.com</a></td>
<td><a href="http://sccac.ca.gov/">http://sccac.ca.gov/</a></td>
<td>4th Monday at 6:30 PM</td>
<td>North County Services District Room at 148 South Wilson</td>
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<tr>
<td>South County Advisory Council - Traffic and Circulation Committee</td>
<td><a href="mailto:william_woodson@hotmail.com">william_woodson@hotmail.com</a></td>
<td><a href="http://sccac.ca.gov/">http://sccac.ca.gov/</a></td>
<td>2nd Thursday at 10:00 AM</td>
<td>North County Services District Room at 148 South Wilson</td>
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<tr>
<td>Templeton Area Advisory Group</td>
<td><a href="mailto:dclarue_air@yahoo.com">dclarue_air@yahoo.com</a></td>
<td><a href="http://www.taaginfo.org/">http://www.taaginfo.org/</a></td>
<td>3rd Thursday at 7:00 PM</td>
<td>Community Church</td>
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<tr>
<td>Templeton Area Advisory Group - Traffic and Circulation Committee</td>
<td><a href="mailto:all@15cwine.com">all@15cwine.com</a></td>
<td><a href="http://www.taaginfo.org/">http://www.taaginfo.org/</a></td>
<td>TBD</td>
<td>Templeton Community Services District at 206 5th St</td>
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<td>CSA 23</td>
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<td></td>
<td>1st Thursday at 7:00 PM.</td>
<td>Santa Margarita Community Hall 22501 I Street</td>
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Advisory Committee Schedule (confirm emails and date prior to attendance)
8. **Future Agenda Items**

D. **Avila Beach Drive Interchange Improvements – Caltrans (May 2016)**

The presentation on the project given at the December 2015 Avila Advisory Committee is attached. The Caltrans project manager recently retired and the new staff was unable to attend. Bicycle Advisory Committee should consider a list of question for Caltrans in advance of the May meeting.

E. **Oceano Revitalization Plan - Public Works (TBD)**

Public Works is working toward revitalization on Highway 1 which includes Class II bike lanes on Highway 1. Will come back to BAC when project specific alternatives are developed. No money has been identified for construction. Revitalization Plan concepts can be found in [http://www.slocounty.ca.gov/Assets/PL/Draft+Plans/OceanoRevit.pdf](http://www.slocounty.ca.gov/Assets/PL/Draft+Plans/OceanoRevit.pdf)
AVILA BEACH DRIVE INTERSECTION IMPROVEMENTS

• The Southbound Route 101 Off-ramp to Avila Beach Drive is experiencing poor operations during weekday pm peak periods and summer tourist traffic peaks.

• Traffic patterns at the US 101 northbound off-ramp, Avila Beach Drive and Monte Road intersection are unpredictable and challenging for both vehicles and bicyclists. Vehicles exit at high speeds on the northbound off-ramp, continuing on to Avila Beach Drive through the northbound and southbound ramp intersections and are not required to yield to minor movements.

• County of San Luis Obispo initiated a project to address this issue in January 2015.

The Programming Document (PSR-PDS) will be complete by December 2015.

Program Project and start Environmental Studies 7/2016
Complete Environmental Approvals 8/2018
Final Design Complete-Construction Starts 12/2020
Estimated Cost to Complete Environmental Studies $1.0 Million
Estimated time to build 1 year

**Estimated Construction Costs**
Southbound Roundabout $4.6 Million Adjusted for Inflation (estimate date 11/5/2015)
Northbound Roundabout $3.0 Million Adjusted for Inflation (estimate date 11/5/2015)

Neither Alternative involves modification or replacement of the existing highway bridges
PISMO SB 101 Operational Improvements

Traffic flow on south bound Route 101 from Shell Beach through Pismo Beach exceeds road capacity from 4 PM to 6 PM weekday evenings.

Adding new lanes with full shoulders is an immensely expensive and complex undertaking.

Instead of widening, Caltrans and SLOCOG are proposing simpler and innovative measures to address the congestion.

- Extend truck climbing lane to reduce merge friction
- Install a Managed Shoulder to temporarily increase capacity and reduce congestion related accidents
- Revise Mattie Road Ramps to reduce merge friction
START TRUCK LANE EXTENSION
START MANAGED SHOULDER

END TRUCK LANE EXTENSION
END MANAGED SHOULDER
AUXILLARY LANE TO ROUTE 1/DOLLIVER

SHORE CLIFF LODGE
The Managed Shoulder Option Utilizes the paved shoulder during peak traffic periods.

Extensive studies will be conducted including:

- Modeling
- Safety and Operational Analysis
- Alternative development and analysis
- Community Involvement
- Consistency with FHWA methods and standards

In order to determine the most effective way to safely improve traffic flow within the existing road system.

“temporary addition of a shoulder lane allows congested roadways to have higher throughput at reduced speeds”

*Synthesis of Active Traffic Management Experiences in Europe and the United States*  
*FHWA*

“The temporary shoulder use by all or a subset of vehicle types can provide additional capacity in a bottleneck section and improve overall facility performance. Similarly, temporary shoulder use by transit vehicles in queuing locations can improve service reliability by enabling the transit vehicles to bypass the mainline queue.”

*Final Report of Operational and Safety Characteristics of Shoulders Used For Part-time Travel Lanes-RICHARD DOWLING*
Examples of Temporary Shoulder Use in the U.S.*

CA I- 805/SR 52
DE US 202
FL SR-826 and SR-836
GA SR-400
MD US-29
MN Minneapolis/St. Paul
MN I-35W
NJ SR-22
VA SR-267
HI H-1
MA I-93 Northern Section
MA I-93 Southern Section
MA I-95
MA SR-3
VA I-66
WA US-2

Examples of Temporary Shoulder Use Outside the U.S.*

Netherlands
Germany
United Kingdom
Ottawa, Ontario (Canada)
Toronto, Ontario (Canada)
Auckland, New Zealand
Dublin, Ireland
Taiwan

*Final Report Evaluation of Operational and Safety Characteristics of Shoulders Used For Part-time Travel Lanes
Prepared for: Federal Highway Administration 11/02/2011
Safety Measures:

Speed Control and Speed Harmonizing
Queue Protection
CCTVs to monitor for debris and Incidents
Safety Turnouts
Incident Response
Traffic Operations Center monitoring
Roadway Traffic Sensors
Automatic and Manual Operation (for opening and closing the shoulder)
Vehicle Type Control ie: busses only, small cars only
Occupancy Control: ie: High Occupancy Vehicle or High Occupancy Toll
Enhanced Traffic Enforcement
Geometric Analysis ie: lane width/spacing, striping
Junction Control: using variable traffic signs, dynamic pavement markings, and lane use control to direct traffic to specific lanes (mainline or ramp) based on varying traffic demand or incidents, to effectively utilize available roadway capacity and manage traffic flows to reduce congestion and provide safe operation.
Dynamic Re-routing: changing destination signing to account for downstream traffic conditions
Traveler Information: providing estimated travel time information and other conditions reports allowing for better pre-trip and in-route decisions
Recently Completed Virginia I-495 North Shoulder Lane Use

VDOT began work on June 1, 2014

The 1.5-mile project allows traffic to travel on the left shoulder of northbound I-495 from where the 495 Express Lanes end to the George Washington Parkway. The existing shoulder was rebuilt to accommodate traffic.

The shoulder is open to all traffic during peak travel periods on weekdays from 7 to 11 a.m. and 2 to 8 p.m. A lane-use management system, with green arrows and red "X's" similar to the lane-control system on I-66, alerts travelers when the shoulder is available.

In addition, the project includes several safety enhancements such as upgraded concrete barriers in the median of I-495, new cameras and electronic highway signs to help with incident response and traveler information.

All travelers and buses are benefiting from the new capacity and improved merge. There is no barrier separation between the shoulder lane and the regular Beltway lanes, ensuring easy access for travelers.

**Estimated Project Cost**

Preliminary engineering: $3.0 million
Construction: $17.0 million
Total $20 million

**Anticipated project schedule**

Construction of the shoulder project began on June 1, 2014.
Open to traffic in July 2015, final completion scheduled for Summer 2015.