COMMENTS TO EISENHOWER AVE WIDENING AND ROADWAY IMPROVEMENT PROJECT; STATE PROJECT #U000-100-135, UPC # 77378

The purpose of this document is to provide written comments regarding the Eisenhower Widening and Roadway Improvement Project. These comments are in response to the information provided during the course of a Public Hearing, held at the Lee Recreation Center on 4 Apr 2013.

I am opposed to two elements of the plan – the removal of the traffic circle (roundabout) at Eisenhower and Holland Lane and the installation of red bricks as sidewalks along the north and south sides of Eisenhower between Holland Lane and Mill Road.

This document will address only the removal of the traffic circle at Eisenhower Avenue and Holland Lane. Comments regarding the brick sidewalks will be made under separate cover.

TRAFFIC CIRCLE REMOVAL: The project proposes to completely replace the traffic circle at Eisenhower and Holland land and configure that intersection to a T-Intersection with a traffic light.

A. The 2000 Highway Capacity Manual is Inaccurate:

(1) The City justification for this modification is supported in part by the information complied in Alexandria's Corridor Wide Traffic Impact Study and during the public hearing when city representatives explained that the intersection needed to be modified so that pedestrians could safely cross the intersection. A review of the Traffic Impact Study revealed that it uses the 2000 Highway Capacity Manual to obtain methodology and predict future Levels of Service.

(2) A 2008 Transportation Research Board study disclosed that the default values delineated in the 2000 Highway Capacity Manual were not accurate. The following citation is provided:

NCHRP REPORT 599 (National Cooperative Highway Research Program Project 3-82; ISSN 0077-5614; ISBN: 978-0-309-09931-8; Library of Congress Control Number 2008925081

TRB is one of six major divisions of the National Research Council— a private, nonprofit institution that is the principal operating agency of the National Academies in providing services to the government, the public, and the scientific and engineering communities. The National Research Council is jointly administered by the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. TRB's varied activities—described below—annually engage more than 7,000 engineers, scientists, and other transportation researchers and practitioners from the public and private sectors and academia, all of whom contribute their expertise in the public interest by participating on TRB committees, panels, and task forces. The program is supported by state transportation departments, federal agencies including the

component administrations of the U.S. Department of Transportation, and other organizations and individuals interested in the development of transportation.

Purpose of the Guidebook

Many of the HCM default values are not always applicable to given local conditions. This is true because the default values are based on limited data collected over several years or they are not provided. Prior to this project effort, no nationwide research effort had been conducted to assemble field measurements to determine if the default values contained in the HCM represent typical conditions.

This research effort was conducted to assemble field measurements for the relevant input variables. As a result of this effort, this Guidebook was prepared to assist users of the HCM in the selection of default values for various HCM applications. First, appropriate default values that should be used for inputs to HCM analyses were identified. Then, a guide to select default values for various applications was developed.

This Guidebook describes the use of the current default values contained in the HCM and their application in planning and operations analysis practices (Chapter 2). Changes to existing default values in the HCM are recommended based on the analysis of an extensive set of data that was collected throughout the United States (Chapter 3). When field data were not available, guidance was developed (based on research results) to assist the analyst in estimating appropriate default values (Chapter 4).

B. The 2000 Highway Capacity Manual is Incomplete

1. The 2000 Internal Study of the four editions of the Highway Capacity Manual disclosed that they have evolved and that they are expected to continue to evolve. The information below details new techniques and concepts need to be addressed.

2. Committee on Highway Capacity and Quality of Service, Secretary: Richard G. Dowling, Dowling Associates

Highway Capacity and Quality of Service

WAYNE K. KITTELSON, Kittelson & Associates, Inc.

This paper begins with a review of the important evolutionary changes that have occurred in both methodology and philosophy since the inception of the Committee on Highway Capacity and Quality of Service (HCQS) in 1944. With the guideposts defined by this history, a vision of future directions the committee expects to undertake in the next decade is presented. Summary observations about the committee's past, present, and future conclude the paper.

INTRODUCTION

In the past 50 years, the HCQS Committee has produced three formal editions of the *Highway Capacity Manual* (HCM); the fourth edition will be published by the Transportation Research Board (TRB) in 2000. More than just describing a series of analytic procedures, these documents reflect the profession's evolution of thought over the past 50 years about the defining characteristics of our transportation system. Such

changes are important to identify and reflect upon because they map a path that helps identify where the continuation of this thought process is likely to lead.
A historical review of the four editions of the HCM leads to the conclusion that in the past 50 years, evolutionary changes of significant proportions have occurred in at least three……..
New Analysis Techniques and Concepts for Emerging Interest Areas
The future can be expected to bring the need for new analysis techniques or concepts not previously required. For example, it became clear only in the later stages of planning for HCM 2000 that practitioners in the United States will soon need to consider modern roundabouts as a viable intersection form in many circumstances. Although HCM 2000 does include some initial guidance in estimating the capacity of roundabouts, it is not based on any U.S. experience and offers no guidance in estimating level of service.

C: **The 2000 Highway Capacity Manual is Outdated and Obsolete:**

1. In 2010, a newer version of the Highway Capacity Manual was released to the public. It is available for sale to all branches of government and private individuals. A cursory perusal of the available report determined Chapter 21 of the 2010 Highway Capacity Manual addresses traffic circles and roundabouts. The following information is excerpted from the 2010 Manual.

2. Chapter 21, Roundabouts, presents concepts and procedures for analyzing these intersections. National Cooperative Highway Research Program Project 3- 65 (1) provided a comprehensive database of roundabout operations for U.S. conditions on the basis of a study of 31 sites. The procedures that follow are largely founded on that study's recommendations. These procedures allow the analyst to assess the operational performance of an existing or planned one-lane or two-lane roundabout given traffic demand levels.

3. Based on the information above, the following information was obtained

4. National Cooperative Highway Research Program Project 3- 65 (1)
Roundabouts in the United States

Summary
Based on the findings of this study, roundabouts appear to be successful in a wide variety of environments in the United States. The following sections summarize the major conclusions from this study.

Safety Performance
In general, roundabouts have improved both overall crash rates and, particularly, injury crash rates in a wide range of settings (urban, suburban, and rural) for all previous forms of traffic control except for all-way stop control, for which no statistically significant difference could be found. In addition, single-lane roundabouts have better safety performance than multilane roundabouts. The safety performance of multilane

roundabouts appears to be especially sensitive to design details. This study produced a number of major safety findings:
Intersection-level crash prediction models for the prediction of the overall safety performance of the intersection. These models relate the crash prediction to the number of lanes, number of legs, and the average annual daily traffic.
Approach-level crash prediction models that relate common types of crashes (e.g., exiting circulating crashes) to average annual daily traffic volumes and key geometric parameters that were demonstrated to influence the prediction.
An updated comparison of the performance of roundabouts to other forms of traffic control, disaggregated to a greater extent than any previous study of U.S. roundabouts.

Operational Performance
Currently, drivers in the United States appear to use roundabouts less efficiently than models suggest is the case in other countries around the world. In addition, geometry in the aggregate sense—number of lanes—has a clear effect on the capacity of a roundabout entry; however, the fine details of geometric design—lane width, for example—appear to be secondary and less significant than variations in driver behavior at a given site and between sites.

D. T-INTERSECTION IS SAFER FOR PEDISTRIANS:

1. A review of publicly available documentation disclosed an abundance of studies and reports, published over the past 5 -10 years all of which determined that pedestrian safety is not diminished when roundabouts or traffic circles are installed. Below are some examples.

2. From the American Public Health Association, April 2001:
This study estimated potential reductions in motor vehicle crashes and injuries associated with the use of roundabouts as an alternative to signal and stop sign control at intersections in the United States. METHODS: An empiric Bayes procedure was used to estimate changes in motor vehicle crashes following conversion of 24 intersections from stop sign and traffic signal control to modern roundabouts. RESULTS: There were highly significant reductions of 38% for all crash severities combined and of 76% for all injury crashes. Reductions in the numbers of fatal and incapacitating injury crashes were estimated at about 90%. CONCLUSIONS: Results are consistent with numerous international studies and suggest that roundabout installation should be strongly promoted as an effective safety treatment.

3**.** From the Washington State Department of Traffic, Undated Report: Studies have shown that roundabouts are safer than traditional stop sign or signal-controlled intersections.

Roundabouts reduced injury crashes by 75 percent at intersections where stop signs or signals were previously used for traffic control, according to a study by the Insurance

Institute for Highway Safety (IIHS). Studies by the IIHS and Federal Highway Administration have shown that roundabouts typically achieve:

- A 37 percent reduction in overall collisions
- A 75 percent reduction in injury collisions
- A 90 percent reduction in fatality collisions
- A 40 percent reduction in pedestrian collisions

4. From Seattle, WA and Portland Oregon as repoted by the National Highway Traffic safety Adminsitration, Newsletter entitled "Safe Routes to School, Sep 2002: The City of Seattle reported a 77 to 91 percent reduction in traffic collisions in some communities after it installed 700 traffic circles, while Portland, Oregon, experienced a 58 percent reduction in the number of reported crashes.

5. From the Wisconsin Department of Transportation, Undated Report: Modern roundabouts are among the newer forms of intersection control in the U.S. along with the J-turn, Echelon, diverging diamond, and others. Wisconsin has over 200 roundabouts installed and operating at this time. Several others are in the planning stages around the state. The modern roundabouts are much smaller than the "traffic circles" of earlier years.

Roundabouts provide safe and efficient traffic flow. A number of safety studies have been researched by the University of Wisconsin Traffic Operations and Safety laboratory (UW TOPS lab), the Insurance Institute for Highway Safety and others internationally.

Roundabouts move traffic safely through an intersection because of: Slower speeds; fewer conflict points and easier decision-making

The safety studies by the UW TOPS lab shows that roundabouts provide a 52 percent reduction in fatal and injury crashes; 9 percent reduction for all crashes and roundabouts are also bringing about a significant decrease in severe crashes.

6. From the Institute for Highway Safety, Status Report; Vol. 40, No 9, Nov 19, 2005 Vail Colorado; Town without Signal Lights

Before the first roundabout was constructed in Vail, Colorado, ski season traffic was leaving visitors and local residents alike wanting to ditch their cars and just ski into town. Now traffic at every exit from an interstate highway entering Vail is governed by a roundabout. The result is that traffic backups have largely disappeared.
But the process wasn't easy.
The first proposals for roundabouts were resisted. Warren Miller, a local filmmaker, protested in the newspaper for six months. Still two roundabouts were built in 1995, and

the opposition diminished as motorists got used to the new traffic patterns and noticed that vehicles were moving more smoothly. The newspaper published letters from Miller, who admitted he had been wrong. With public support, two more roundabouts opened in 1997. Now Vail is known as a town without signal lights.
Besides enduring fewer backups, motorists benefit in terms of safety. Greg Hall, director of public works and transportation, says crashes were reduced by about 20 percent from 3 years before the first roundabout to 3 years after. Injury crashes have gone down 85 percent. And despite initial concerns that bicyclists and others wouldn't adapt to the roundabouts, there has been only 1 crash involving a bicycle in the 10 years since Vail opened its first roundabout.

7. From the Traffic Review Board, a multi page undated report TRB ID: 01-0562, (https://ceprofs.civil.tamu.edu/dlord/Papers/trb_01-0562CDFINcor.pdf)

Abstract
Modern roundabouts are designed to control traffic flow at intersections without the use of stop signs or traffic signals. U.S. experience with modern roundabouts is rather limited to date, but in recent years there has been growing interest in their potential benefits and a relatively large increase in roundabout construction. This interest has created a need for data regarding the safety effect of roundabouts. This paper evaluates changes in motor vehicle crashes following conversion of 23 intersections from stop sign and traffic signal control to modern roundabouts. The settings, located in 7 states, were a mix of urban, suburban, and rural environments with both single-lane and multilane designs in the urban sample and the rural sample consisting of only single-lane designs. A before-after study was conducted using the empirical Bayes procedure, which accounts for regression-to-the-mean and the traffic volume changes that usually accompany conversion of intersections to roundabouts. Overall, for the 23 intersections combined, this procedure estimated highly significant reductions of 40 percent for all crash severities combined and 80 percent for all injury crashes. Reductions in the numbers of fatal and incapacitating injury crashes were estimated to be about 90 percent. In general, the results are consistent with numerous international studies and suggest that roundabout installation should be strongly promoted as an effective safety treatment for intersections. Since the empirical Bayes approach is relatively new in safety analysis, a secondary objective of the paper is to demonstrate the potential of this methodology in the evaluation of safety measures.

Discussion
Results of this study indicate that converting conventional intersections from stop sign or traffic signal control to modern roundabouts can produce substantial reductions in motor vehicle crashes. Of particular note are the large reductions found in the number of injury crashes, especially those involving incapacitating and fatal injuries. The use of the state-of-the-art empirical Bayes methodology to account for regression to the mean and traffic volume changes reinforces the validity of these findings when taken with the fact that they are generally consistent with the results of numerous international studies. The accumulated knowledge suggests that roundabout construction should be strongly

promoted as an effective safety treatment for intersections. Given the large numbers of injury (700,000) and property damage (1.3 million) crashes that occur each year at traffic signals and stop signs in the United States (*14*), widespread construction of roundabouts can produce substantial reductions in injuries and property damage losses associated with motor vehicle use on public roads.

8. From National Pubic Radio broadcast, Sep 28, 2011:
Over the past decade, the number of roundabouts in the U.S. has increased dramatically, from the low hundreds up to the thousands. Modern traffic circles can cut down on commute time and pollution. Studies have shown that they even reduce accidents. And many American cities are planning to put in more. But there are still a few roadblocks in the way of a true roundabout revolution.

Near a standard traffic circle in West Los Angeles, a nexus of car culture, NPR put up a handwritten sign that said, "Talk to a reporter about roundabouts."

Matt Perkins was the first to stop after riding around one on his bike. "It was as good as it always is," Perkins says. "I love roundabouts." Perkins grew up in Denmark, where there are lots of them. But Sheila Keiter and her two sons say they avoided the roundabout because they think it's too dangerous. The family even has a special name for them, Keiter says: "the blood circle." "Because there's cars and there's gonna be a lot of blood and then you can get hit when you're trying to get there," says her son, Alon, 6.

Coming To An Intersection Near You
Roundabouts in the U.S. have been on the rise. In 2007, for example, there were about 970; in 2011, there are more than 2,000, according to Lee Rodegerdts of Kittelson and Associates, a transportation engineering and planning firm.

And soon there could be lots of roundabouts in your city. Chicago has seen a big jump; cities in Colorado have them. Soon L.A. will throw its hat in the ring and get its first modern roundabout, which means three things: the roundabout will be large, drivers will be forced to slow down as they approach the roundabout by a deflecting island, and they'll have to yield on entry. (Older-design traffic circles, meanwhile, did not meet all three of these criteria.)

NPR met Michael Hunt, a transportation engineer with the City of Los Angeles, at the junction of Cesar E. Chavez Avenue and Indiana and Lorena streets. This ragged five-leg intersection in East L.A. will be the first intersection retrofit in the city. After the street lights are ripped out and the new circle put in, cars will flow through without stopping. Hunt says there will be huge savings in emissions when cars no longer idle at a red light. "They're coming to a stop over at Cesar Chavez. Right now they've been there for about 30 seconds," Hunt says. "You have 20 cars almost every single cycle" stopped and wasting gas at every cycle, Hunt says. "And that's off-peak hours. At peak hours, you have hundreds of vehicles, literally."

Hunt estimates that more than 100 hours of cars just sitting there wasting gas will be saved every day after the retrofit. That calculates to a reduction in tens of thousands of pounds of greenhouse gases every year. "You can actually help move goods faster, you get people to work faster, you help the environment because there's less congestion," he continues. "It's obviously going to be safer."

9. Finally, the US Department of Transportation has complied a substantial amount of documentation pertaining to research of roundabouts and pedestrian safety. This research, complied after the issuance of the 2000 Highway Capacity Manual is as follows:

Technical Implementation & Tools

- Mini-Roundabouts**:** Technical Summary | Presentation
  This technical summary is designed as a reference for State and local transportation officials, Federal Highway Administration (FHWA) Division Safety Engineers, and other professionals who may be involved in the design, selection, and implementation of mini-roundabout intersections.
- NCHRP Report 572: Roundabouts in the United States**,** Transportation Research Board, The National Academies, 2007. [PDF 4.33 MB]
  Based on a comprehensive evaluation of roundabouts in the United States, the report presents methods of estimating the safety and operational impacts of roundabouts and updates design criteria for them. The report will be useful to geometric designers and traffic engineers considering improvements to an intersection.
- NCHRP Report 674: Crossing Solutions at Roundabouts and Channelized Turn Lanes for Pedestrians with Vision Disabilities**,** PDF (8.3 MB)
  This report is intended to provide practitioners with useful information related to establishing safe crossings at roundabouts and channelized turn lanes for pedestrians with vision disabilities. The results of this research will be useful to engineers, the accessibility community, policy makers, and the general public to aid in understanding the specific challenges experienced at these facilities by pedestrians with vision disabilities.
- **Non-visual gap detection at roundabouts by pedestrians who are blind: A summary of the Baltimore roundabouts study**
  The Access Board Report is a summary of a research project conducted in the Baltimore, Maryland metropolitan area in April, 2000. The study was the first of a series of research projects to be conducted to evaluate access to modern roundabouts by pedestrians who are blind.
- **Pedestrian Access to Modern Roundabouts: Design and Operational Issues for Pedestrians who are Blind**
  The proposed description is "Research sponsored by the Access Board, the National Eye Institute, and the American Council of the Blind suggests that some roundabouts can present significant accessibility challenges and risks to the blind user. This report

summarizes orientation and mobility techniques used by pedestrians who are blind in traveling independently across streets; highlights key differences between roundabouts and traditional intersections with respect to these techniques; suggests approaches that may improve the accessibility of roundabouts to blind pedestrians; and encourages transportation engineers and planners to implement and test design features to improve roundabout accessibility.

- Pedestrian Access to Roundabouts: Assessment of Motorists' Yielding to Visually Impaired Pedestrians and Potential Treatments To Improve Access**,** FHWA-HRT-05-080, May 2006. [HTML, PDF 1.14 MB]
- **NEW Proven Safety Countermeasures**
  Roundabouts are featured as one of the nine Proven Safety Countermeasures that are the subject of the 2012 Guidance Memorandum on Promoting the Implementation of Proven Safety Countermeasures.
- **Roundability Accessibility Summit**, 2002.
  The Roundabout Accessibility Summit brought together stakeholders to address accessibility issues within roundabouts as input to the U.S. Access Board Draft Public Rights of Way Accessibility Guidelines.
  - Attachment 1: Final Agenda.
  - Attachment 2: Proposed Access Board Guidelines on Roundabouts.
  - Final Roster: Roundabout Accessibility Summit
- **Roundabout Fact Sheet, FHWA, CRT, Corporate Research & Technology. Roundabouts are a proven safety solution that prevent and reduce the severity of intersection crashes.** Roundabouts are designed to meet the needs of all road users—drivers, pedestrians, pedestrians with disabilities, and bicyclists. A roundabout eliminates some of the conflicting traffic, such as left turns, which cause crashes at traditional intersections. Because roundabout traffic enters or exits only through right turns, the occurrence of severe crashes is substantially reduced. [PDF 59 KB]
- **Roundabout Outreach and Education Toolbox**
  This Toolbox is designed to be a highly useable, online reference that connects transportation professionals with outreach resources from across the country to help them obtain public support for roundabouts.
- **Roundabouts: An Informational Guide, FHWA-RD-00-67, June 2000**
  [HTML, PDF 344 KB]
- **Roundabouts: An Informational Guide, Second Edition**, PDF (25 MB) | NHI Workshop
  Published as NCHRP Report 672, the 2010 edition of the Roundabouts Informational Guide is now available for free download from the TRB website or for purchase from the TRB bookstore (http://books.trbbookstore.org/). The Second Edition was jointly funded by FHWA and NCHRP, and replaces the First Edition as a comprehensive guide to roundabouts planning, design, analysis and operation, now based on more than a decade of U.S. experience. Also, the FHWA National Highway Institute

workshop Modern Roundabouts: Intersections Designed for Safety has been updated to reflect the new Guide; please visit the NHI website to learn more.

- **Roundabouts:** Technical Summary | Presentation
  This technical summary explores the characteristics of modern roundabouts while reinforcing the need to apply a principles-based approach to design.
- **Summary Report: An Evaluation of Signing for Three-Lane Roundabouts**, March 2010
  Signing and marking strategies are important for all types of roundabouts, but the complexities of three-lane roundabouts necessitate additional research and examination of in order to achieve desired lane use confidence and discipline by drivers. The objectives of this study were to identify signing and marking strategies that result in higher levels of comprehension and compliance in lane selection on the approach to roundabouts and to examine the effects of these strategies on lane use after an approach lane has been selected.

CONCLUSION:

In light of the information provided in this document, it is hoped the reader realize the decision to remove the existing traffic circle at Eisenhower Avenue and Holland Lane was made in part based on faulty and obsolete information contained in the 2000 Highway Capacity Manual. Domestic and international studies completed over the past decade and reported in the current 2010 Highway Capacity Manual and numerous other studies have shown that over the past decade, traffic circles have been proven to be a substantially safer and more effective means of traffic control for vehicle and pedestrians alike.

It is felt the city managers and traffic planners got it right many years ago when the Eisenhower Traffic Circle was constructed. It is hoped that present day city officials embrace the vision stated in their own Corridor Wide Traffic Impact Study and allow the East Eisenhower corridor to "welcome visitors to the City's Old Towne section with the vision of a "Gateway" or Grand Boulevard" that includes a well maintained roundabout and not a line of traffic backed up at a traffic light.

Respectfully

//signed//
JAMES W. SAVAGE
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