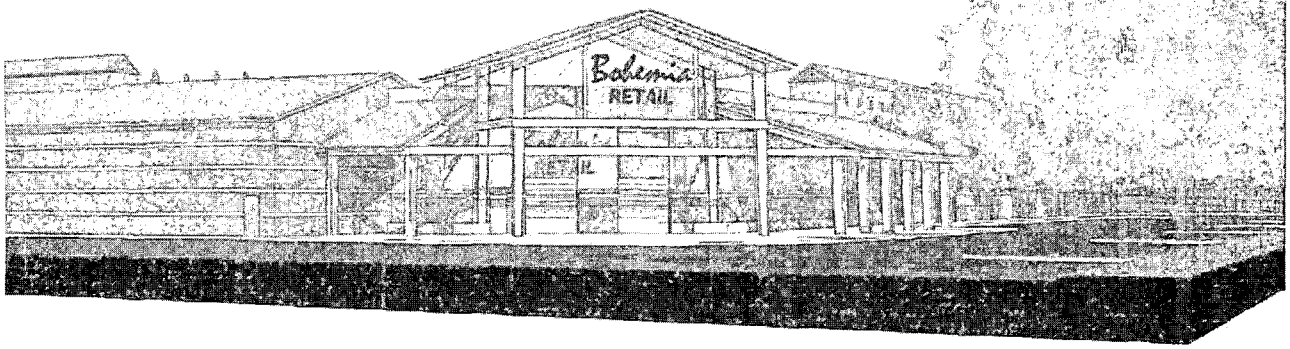
BOHEMIA RETAIL

SCH# 2001042086



ADDITION TO THE FINAL ENVIRONMENTAL IMPACT REPORT

PREPARED FOR
PLACER COUNTY

SEPTEMBER 2010

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Exhibit 8
405

TABLE OF CONTENTS

PAGE

1. INTRODUCTION 1-1

2. RESPONSES TO THE APPEAL 2-1

APPENDICES

A. URBEMIS Output Data for the No Canal Street Access Alternative
B. Technical Traffic Worksheets for the Cumulative Plus No Canal Street Access Alternative

1 INTRODUCTION

1.0 INTRODUCTION

On July 8, 2010 the Planning Commission of Placer County certified the Final Environmental Impact Report (FEIR) and approved the Conditional Use Permit for the Bohemia Retail Project generally located northeast of the intersection of SR 49 and Luther Road, with primary access from Hulbert Way.

On July 16, 2010, the Placer County Planning Department received an Appeal on the Planning Commission's approval of the Bohemia Retail project submitted by the Alliance for the Protection of the Auburn Community Environment (APACE). The filing of the appeal makes the Board of Supervisors (Board) the final decision-maker on the Project, with its own obligation to consider the Final EIR and to certify the document if the Board concludes that it was "completed in compliance with CEQA" and reflects Placer County's "independent judgment" (CEQA Guidelines, § 15090, subd. (a).) Thus, although the Planning Commission has already certified the Final EIR, that action is not binding on the Board, which is entitled to receive and consider additional information in making the final decision whether to certify the document.

1.1 PROCESS FOR INCLUSION OF ADDITIONAL INFORMATION

While CEQA does not require Placer County to include the responses to the Appeal within the Final EIR as ultimately certified, County staff has chosen to include its responses within a document it is calling an "Addition" to the Final EIR. The County chose this title because of the absence of a term of art under CEQA for a document that, prior to final administrative action on a project, simply augments the analysis in an originally published final EIR prior to the time that document is formally certified.

The County has not formally circulated this Addition because it contains no significant new information and there is no legal requirement to do so. Under CEQA Guidelines section 15088.5, recirculation of some or all of a draft EIR (or a proposed but not-yet-certified final EIR) is only required where "significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification." This section goes on to say that "[n]ew information added to an EIR is not 'significant' unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. 'Significant new information' requiring recirculation include, for example, a disclosure showing that:

(1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.

(2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.

(4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (*Mountain Lion Coalition v. Fish and Game Com.* (1989) 214 Cal.App.3d 1043)

None of the conditions set forth in CEQA Guidelines Section 15088.5 requiring recirculation have been triggered. As will be evident from the responses set forth herein, neither the appeal nor the responses have shown the existence of any new significant effect on the environment not previously disclosed or any substantial increase in the severity of a previously identified environmental impact. Nor have the appeal or the responses revealed any feasible project alternative or mitigation measure that is both (i) considerably different from those disclosed previously and (ii) unacceptable to the project proponent. Nor can it be reasonably said that the new information at issue demonstrates that the original Draft EIR "was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded." Rather, the responses to the Appeal on the Bohemia Retail project approval, included in Chapter 2 of this Addition, provide further substantiation that the EIR for the Project adequately evaluates the potential impacts of the originally proposed project, as well as those of the No Canal Street Access Alternative (which is now the applicant's proposed project). More specifically, the remainder of this document explains why the following subject areas have been addressed in a manner fully compliant with CEQA:

I. Air Quality Analysis
II. Socio-Economic or Urban Decay Analysis
III. Cumulative Impacts Analysis

Basis of Appeal

The Appeal document provides the legal basis for the appeal as being "...the Planning Commission's improper approval of the Project EIR, due to its legally deficient analysis regarding Air Quality, Urban Decay Analysis, and Cumulative Impacts of the No Canal Street Project." The following discussion in this Addition to the Bohemia Retail Final EIR will demonstrate that the Bohemia Retail EIR (consisting of the Draft EIR and Final EIR, defined as including this Addition) adequately identified and evaluated the potential environmental impacts of the No Canal Street Access Alternative.

As an introductory point, it is worth noting that the arguments made in the appeal, though not always styled as such, are really an attack on the adequacy of the alternatives analysis in the EIR, as opposed to an attack on the analysis of the originally proposed project. This is so because the project applicant, in response to public input on the Draft EIR, is no longer pursuing the project as originally proposed, but instead seeks approval of what the Draft EIR called the "No Canal Street Alternative." This change in the project indicates that CEQA has accomplished its purpose, as the applicant, in response to the analysis undertaken on the project, is proposing to lessen impacts and make the proposed project better from the standpoint of the residents in nearby areas, many of whom strongly opposed the Canal Street access associated with the original project. This change in approach is how CEQA is intended to work, as alternatives are one mechanism by which CEQA requires public agencies to find potentially feasible means of reducing the severity of significant environmental effects.

As the California Supreme Court has explained, "alternatives and mitigation measures have the same function – diminishing or avoiding adverse environmental effects. The chief goal of CEQA is mitigation or avoidance of environmental harm."[1] Applicants are therefore encouraged to consider revising their originally proposed projects in order to conform to alternatives discussed in EIRs. Applicants should not be penalized for making such changes when the result is that a project "evolves" during environmental review. As is well recognized, "[t]he CEQA reporting process is not designed to freeze the ultimate proposal in the precise mold of the initial project; indeed, new and unforeseen insights may emerge during investigation, evoking revision of the original proposal."[2] "'CEQA compels an interactive process of assessment of environmental impacts and responsive project modifications which must be genuine. It must be open to the public, premised upon a full and meaningful disclosure of the scope, purposes, and effect of a consistently described project, with flexibility to respond to unforeseen insights that emerge from the process.' In short, a project must be open for public discussion and subject to agency modification during the CEQA process."[3]

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[1] / *Laurel Heights Improvement Association v. The Regents of the University of California* (1988) 47 Cal. 3d 376, 403 (*Laurel Heights I*).

[2] / *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 736-737.

[3] / *Concerned Citizens of Costa Mesa, Inc. v. 32nd District Agricultural Association* (1986) 42 Cal.3d 929, 936 [citations omitted].

2 RESPONSES TO APPEAL

In light of the fact that the applicant is now seeking approval of a proposal that began as an EIR alternative, it is important to keep in mind the legal standards for an adequate alternatives analysis, which are less rigorous than those applicable to analysis of the ostensible "project" in an EIR. "CEQA establishes no categorical legal imperative as to the scope of alternatives to be analyzed in an EIR. Each case must be evaluated on its own facts, which in turn must be reviewed in light of the statutory purpose."[4] Furthermore, "[n]o ironclad rules can be imposed regarding the level of detail required in the consideration of alternatives."[5] "Absolute perfection is not required; what is required is the production of information sufficient to permit a reasonable choice of alternatives so far as aspects are concerned.'"[6] In general, the discussion of alternatives should "contain facts and analysis, not just the agency's bare conclusions or opinions," and should include "meaningful detail." [7]

I. Air Quality Analysis

The County disagrees with the appellant's contention that "[t]he EIR utterly fails to provide a meaningful analysis of air quality impacts expected under the No Canal Street Project." As will be explained below, the No Canal Street Alternative will not have worse overall air quality impacts than the originally proposed project, as the minor increase in congestion at a single location – the Hulbert Way/SR 49 intersection – will not result in an overall net increase in emissions of *regional* pollutants such as ozone precursors, and will not result in any new significant effect associated with *localized* pollutants such as carbon monoxide (CO). Thus, the No Canal Street Alternative is virtually the same as the originally proposed project in terms of its potential adverse effects on human health, which is the policy concern behind both federal and state air quality laws. Like the originally proposed project, the No Canal Street Alternative will create significant, unavoidable construction-related emissions of NOx, and will have a cumulatively considerable incremental contribution to cumulative regional operational air quality effects. Nonetheless, the minor increase in emissions associated with the new project entrance is so minimal as to represent no real change in the environment compared with the originally proposed project. In short, the change in the primary entrance to the project site is essentially irrelevant from an air quality standpoint.

As noted on page 1-14 of the *Introduction* Chapter of the Bohemia Retail Final EIR,

> ...because during operational activities the No Canal Street Access Alternative would result in higher traffic congestion at the Primary Access, thereby increasing emissions, the No Canal Street Access Alternative would result in a greater impact in regard to air quality than the proposed project during operational activities.

In order to avoid confusion, it is important to clarify here that the above statement does <u>not</u> mean

[4] / *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 566 (*Goleta II*).
[5] / *Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners* (1993) 18 Cal.App.4th 729, 745.
[6] / *Village Laguna of Laguna Beach, Inc. v. Bd. of Supervisors* (1982) 134 Cal.App.3d 1022, 1029.
[7] / *Laurel Heights I, supra*, 47 Cal.3d at pp. 404, 406.

the No Canal Street Access Alternative would result in additional or worsened significant air quality impacts as compared to the originally proposed project. The issue is one of the concentration of emissions being "greater" at the Primary Access (i.e., Hulbert Way/SR 49 intersection), not the creation of additional emissions or an additional impact. This point can be further illustrated by considering that new vehicle trips would not be created by the No Canal Street Access Alternative as compared to the proposed project; rather, the same number of vehicle trips for the proposed project would be distributed throughout the surrounding roadway network in a different fashion, resulting in a slight increase in the concentration of emissions at the Primary Access. In fact, as elsewhere noted in the *Introduction* Chapter of the Final EIR, implementation of the No Canal Street Access Alternative (Discount Club Store) would only increase the delay at the Primary Access by a mere 0.2 seconds under the AM peak hour and 1.1 seconds under the PM peak hour (1.2 seconds under the Discount Superstore). Tables 17-1 and 17-2, as presented in the *Introduction* Chapter of the Final EIR, are reproduced below:

Table 17-1
Delay Comparison for SR 49 Intersections
Under Existing + Project and Existing + No Canal Street Access Alternative Conditions
(Discount Club Store)

#	Intersection	AM Peak Hour		PM Peak Hour	
		Existing + Project	Existing + No Canal St. Access Alt.	Existing + Project	Existing + No Canal St. Access Alt.
7	SR 49/Kemper Road/New Airport Road	10.8 sec	10.7 sec	25 sec	25.7 sec
8	Primary Access	5.5 sec	5.7 sec	22.9 sec	24 sec
9	SR 49/Luther Road	11.7 sec	11.8 sec	28.3 sec	30.6 sec

Table 17-2
Delay Comparison for SR 49 Intersections
Under Existing + Project and Existing + No Canal Street Access Alternative Conditions
(Discount Superstore)

#	Intersection	AM Peak Hour		PM Peak Hour	
		Existing + Project	Existing + No Canal St. Access Alt.	Existing + Project	Existing + No Canal St. Access Alt.
7	SR 49/Kemper Road/New Airport Road	11 sec	10.9 sec	25.5 sec	26.3 sec
8	Primary Access	7.1 sec	7.3 sec	24.5 sec	25.7 sec
9	SR 49/Luther Road	11.7 sec	11.9 sec	28.8 sec	31.4 sec

These very slight increases in delay would correspondingly create a very slight increase in the concentration of emissions at the Primary Access, as compared to the proposed project. This is what is meant by the statement on page 1-14 of the Final EIR, which is hereby revised as follows to read more accurately:

...because during operational activities the No Canal Street Access Alternative would

> result in higher traffic congestion at the Primary Access, thereby increasing emissions, the No Canal Street Access Alternative would result in a slightly greater ~~impact~~ concentration of emissions in regard to air quality than the proposed project during operational activities, but would not result in any appreciable overall increase in air pollution emissions.

It is also very important to consider that the pollutant of relevance in this discussion is carbon monoxide, as this is the pollutant that can have localized effects at intersections resulting from car exhaust and delay. The typical approach to evaluating whether localized carbon monoxide impacts are significant, and therefore of potential concern to nearby human receptors, is evaluation of worst-case intersection(s) (i.e., "hot spots"), using Caltrans's CALINE-4 software.

As discussed in Impact 9-3 of Chapter 9, *Air Quality*, of the Draft EIR,

> The PCAPCD requires a CALINE4 CO "hotspot" computer analysis for any project that would result in the degradation of LOS at a signalized intersection to LOS E or worse. During the PM peak hour, the existing level of service (LOS) at the intersection of Bell Road and New Airport Road is LOS D. With implementation of the proposed project (under both the discount superstore and the discount club store scenarios), the LOS at this intersection during the PM peak hour would be LOS F, which is the worst LOS ranking (See Chapter 8, Transportation and Circulation, for a discussion of LOS rankings). Because the project would result in the degradation of LOS at a signalized intersection to worse than LOS E, a CALINE4 CO analysis was prepared. This intersection is expected to represent the worst-case scenario for new CO emissions associated with operation of the proposed project; other intersections that would be potentially affected by the project are not expected to experience CO concentrations that exceed the highest predicted CO concentrations at this intersection.

The CO "hotspot" analysis performed for the proposed project indicates that CO emissions at the Bell Road / New Airport Road intersection would be well below, and thereby not exceed, State and federal standards, resulting in a less-than-significant impact.[8] In consideration of the fact that the CALINE "hot spot" analysis for the worst-operating project study intersection determined CO levels would be well below State and federal standards, and the fact that the Primary Access intersection would operate acceptably under all traffic scenarios, [9] it can reasonably be expected

[8] Per Table 9-9 of the Bohemia Retail Draft EIR, 3.3 ppm of CO are currently being emitted at the Bell Road and New Airport Road intersection and 3.6 ppm would be emitted with the project for both the 1-Hour and 8-Hour Average concentrations. The projected 1-Hour and 8-Hour maximum CO concentration resulting from the project (3.6 ppm) is well below the State (20 ppm) and Federal (35 ppm) 1-Hour standards and the State and Federal (9 ppm) 8-Hour standard.

[9] The fact that the Primary Access would operate acceptably under all traffic scenarios is not to be confused with the above Draft EIR excerpt from Impact 9-3, which states that the *Bell Road and New Airport Road* intersection would operate at LOS F during the PM peak hour. Because the *Bell Road and New Airport Road* intersection LOS would change from LOS D to LOS F with implementation of the proposed project, a CALINE analysis was required per PCAPCD standards. The point being made in the above discussion is that if the CALINE analysis for the *Bell Road and New Airport Road* intersection found that CO concentrations would be well below state and federal threshold levels, it can be expected that no CO concentration impacts would occur at the Primary Access intersection, which was found to operate acceptably under all traffic scenarios.

that no significant carbon monoxide impacts would occur at the Primary Access under the No Canal Street Access Alternative, nor would there even be justification for performing a CALINE analysis for the Primary Access intersection per PCAPCD's methodology. Notably, in recent years CO emissions have become much less of a problem than they were during the early days of federal and state air quality regulation due to improved pollution reduction technologies associated with modern vehicle engines. Furthermore, CO emissions will be even less of a problem in the future than they are today for the same reason, as engines get cleaner and cleaner. Although, in the past, areas of intense traffic congestion often resulted in "CO hotspots" that represented unhealthy levels of CO concentration, such hotspots have become very rare in recent times, even where traffic congestion remains very bad.

A further point to consider is that carbon monoxide is not considered a toxic air contaminant (TAC); rather, carbon monoxide is considered a "criteria pollutant." The issue is one of concentration, not toxicity. In other words, unlike many TACs, small amounts of CO do not cause any adverse health effects. Rather, CO only becomes unhealthful when concentrations become intense enough to create "hotspots." As discussed above, a sufficient concentration of carbon monoxide would not be generated at the Primary Access by the No Canal Street Access Alternative to violate either state or federal ambient air quality standards for carbon monoxide.

Regarding the assertions in the Appeal that "neither the DEIR alternatives chapter (ch 17) nor the air quality analysis chapter (ch. 9) provides <u>any</u> data regarding this alternative's increase in pollutants or analysis regarding the greater air quality impacts," it should be reiterated here that the No Canal Street Access Alternative would not result in any new vehicle trips to the roadway network. The regional emissions generated by the operation of the proposed project would not change should the No Canal Street Access Alternative be implemented instead. Therefore, the necessary quantitative emissions data regarding operation of the No Canal Street Access Alternative was provided in the EIR via the quantitative assessment of the proposed project (see Appendix A to this Addition for URBEMIS output data demonstrating that the operational emissions of the No Canal Street Access Alternative would in fact be the same as the proposed project).

Impact 9-4 of Chapter 9, *Air Quality*, of the Draft EIR, discusses the project's potential impacts related to long-term increases in criteria air pollutants. As summarized on page 9-20 of the Draft EIR,

The predicted operational emissions for the project are summarized below in Table 9-10...

Table 9-10
Estimated New Regional Emissions (pounds/day) (Unmitigated)

	ROG	NO_X	PM_{10}	CO
Discount Club Store	69.64[1]	42.77	65.50	360.03
Discount Superstore	76.76[1]	51.62	80.01	436.21
PCAPCD Significance Threshold	**82.0**	**82.0**	**82.0**	**550.0**

[1] It should be noted that the ROG emissions above include the estimated emissions that would be created by the proposed 18-pump fueling station. Pursuant to PCAPCD guidance, it was determined that the rate of emission for fueling stations with CARB Phase I and Phase II emission controls and vent valves is 1.269 pounds per thousand gallons of ROG, and for a station with an annual throughput of 9 million gallons, the resulting emissions would be approximately 31.5 pounds per day of ROG. This additional 31.5 pounds per day was added to the original estimate of project-related ROG emissions, which was 38.14 pounds per day.

Source: Raney Planning & Management, Inc., November 2009.

> Based on the modeling conducted using URBEMIS-2007 (Version 9.2.4), operation of the proposed project would not result in total predicted emissions of ROG, NO_X, or PM_{10} that would exceed the PCAPCD significance threshold of 82.0 pounds per day. Because predicted increases in ROG, NO_X, PM_{10}, and CO would not exceed PCAPCD significance thresholds at project buildout, the project's impact would be ***less-than-significant.***

It follows, then, that the long-term increases in criteria air pollutants associated with the No Canal Street Access Alternative would also result in a less-than-significant air quality impact. While the Draft EIR determined that the proposed project would not create operational air quality emission impacts at the project-level, the Draft EIR determined that the proposed project's incremental contribution to cumulative air quality impacts, using PCAPCD's cumulative thresholds, would be considered a significant impact. Accordingly, the Draft EIR included several mitigation measures (see MM 18-9 (a-h)) to reduce the project's contribution to cumulative air quality impacts to the maximum extent feasible; however, the DEIR determined that the impact would remain significant and unavoidable. As stated on page 1-14 of the *Introduction* Chapter of the Final EIR, "It should also be noted that all air quality-related mitigation measures identified for the proposed project in Table 2-1 of Chapter 2, Executive Summary, of the Draft EIR would be required for the No Canal Access Alternative." Therefore, it can be concluded here that, similar to the proposed project, the No Canal Street Access Alternative would have less-than-significant project-level operational air quality impacts, and a significant and unavoidable incremental contribution toward cumulative air quality impacts, but would be required to implement Draft EIR mitigation measures 18-9 (a-h). Similarly, for greenhouse gases, like the proposed project the No Canal Street Access Alternative would have a significant and unavoidable impact but would be required to implement all components of Mitigation Measure 18-10, which would substantially reduce greenhouse gas emissions.

II. Socio-Economic or Urban Decay Analysis

A. Allegedly Outdated Data Undermine ERA's Conclusions

Response to first Paragraph

Contrary to the appellant's contention, the "urban decay" analysis conducted for the EIR is not out of date and does not only reflect better economic conditions before the onset of the recent severe recession. The Urban Decay and Fiscal Impact Analysis prepared for the Bohemia Retail Project, entitled *Placer County Urban Decay and Fiscal Impact Analysis: Redevelopment of Former Bohemia Lumber Company Site*, dated March 6, 2009 and attached to the Bohemia Retail Draft EIR as Appendix U, addresses the potential effects of the recession on pages 17 and 25-28. This information is also incorporated in part in Chapter 16, *Socio-Economics*, of the Draft EIR on pages 16-10 and 16-30. A key observation regarding the discussion in the aforementioned pages is noted on page 17 of the Urban Decay Analysis (and page 16-10 of the Draft EIR):

> Since the project is so early in the planning process and it is not expected to come on line earlier than 2010, ERA adjusted 2006 per capita retail sales in the trade area to reflect 2010 levels. As shown in Table 11, the total per capita retail sales are estimated at approximately $17,100 in 2010. ERA then applied this number to the estimated population of the trade area to determine total retail sales demand by retail category in 2010, 2015 and 2020. A real income adjustment of 0.2 percent was assumed through 2012 and 0.3 percent thereafter.

Contrary to the Appeal, wherein it is stated that ERA adjusted its data to reflect 2010 information only for population growth and no economic adjustments were made, it is clear that real income adjustments were made to account for the recession. As noted on page 27 of the Urban Decay Analysis,

> The current economic conditions, however, may affect ERA's retail demand projections if incomes do not increase as predicted because of declining employment or declining real incomes, or if the projected population growth does not materialize. ERA has adjusted downward its assumptions about annual real income growth from the observed 1.9 percent per year to 0.2 to 0.3 percent per year. Also, while population growth is unlikely to be affected by the current crisis in the long run, ERA assumes a conservative 1.8 percent annual growth in the trade area. DOF by comparison estimates that the county's population will grow at 2.12 percent per year between 2010 and 2020. These assumptions address some of the uncertainty associated with the national economic outlook.

Response to Second Paragraph

The Appeal asserts that the EIR did not include complete data regarding the length of the recession. This point, though accurate in the sense that the County cannot predict the future with certainty, does not undermine the validity of the urban decay analysis, First, it is not possible to identify the definitive end point of the recession – defined not as a term of art associated with negative quarterly economic growth but defined more broadly as the current period of reduced economic activity, low

consumer confidence, high unemployment, and high deficits– given the multitudinous factors involved in this complex issue. Even the top economists in the United States can only provide educated guesses on the subject. Reflecting this reality, CEQA does not require that lead agencies predict the future with absolute accuracy. Nor could the Legislature mandate perfect prophesy, even if the courts, looking forward in time in reviewing EIRs, could know such prophesy when they see it. Rather, "the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible."[10] "'Crystal ball' inquiry is not required."[11] "[An] agency is not expected to foresee the unforeseeable."[12] Accordingly, and consistent with CEQA Guidelines Section 15145, which instructs lead agencies not to engage in purely speculative impact evaluation, the Draft EIR did not speculate on the termination date of the current recession.

However, the Draft EIR analysis did provide an *estimate* of the length of the recession based on available sources, as follows:

> There are no signs that the economy will improve in the near future. Strategic Resources Group predicts that the retail economy is only a third of the way into a 1,000-day slump. This means that retailers on the margin that are able to survive through the holiday season may still end up closing their doors by spring or summer of 2009. The International Council of Shopping Centers predicted the number of retail stores will shrink 3 to 4 percent in 2009 as mom-and-pop businesses and small retail chains go out of businesses and or close stores. The sectors that are most vulnerable include specialty retailers, luxury stores, auto dealership, and apparel stores. Some supermarkets and drug stores are the only type of retail that is likely to continue doing well.

Another important observation is that the Draft EIR analysis did cite data from the beginning of the recession, which the Appeal alleges is September 2008. As stated on page 25 of the Urban Decay analysis,

> Recent statistics indicate that same-store sales for October, November, and December of 2008 were very weak for all sectors with almost every retailer reporting a decline from the previous year. In December alone retail sales, excluding auto sales, were down a record 3.1 percent. This reflected declines at department stores, specialty clothing stores, furniture stores, hardware stores, restaurants and service stations. Discount retailers like Costco, Target, and Kmart performed poorly. By October, even luxury retailers' sales began to decline. The only major retailer to experience a gain in same-store sales in November was Walmart, which reported a 3.4 percent increase. However, by December, Walmart's sales began to show weaknesses growing at a much slower pace than anticipated. Until that point, Walmart had propped up the retail sector as consumers traded down from more expensive department stores and supermarkets. These figures are particularly troubling given that the last quarter of the calendar year is typically the most profitable for retailers when many of them make their first profits of the year.

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[10] / CEQA Guidelines, § 15151.

[11] / *Residents Ad Hoc Stadium Committee v. Board of Trustees* (1979) 89 Cal.App.3d 274, 286.

[12] / *Alliance of Small Emitters/Metals Industry v. South Coast Air Quality Management District* (1997) 60 Cal.App.4th 55, 66.

Notwithstanding the above, the Draft EIR analysis notes that retail in the Auburn region "is performing relatively well" and provides several explanations for this condition, including, but not limited to, the following:

- A diverse and strong local economy. The sources of employment in the trade area include a variety of industry sectors including manufacturing, retail trade, health and education, and government. The distribution of businesses across types of businesses within the trade area mirrors that of the County and the State, except for a slightly larger share of employment in construction and the health care industry.

- Unemployment rates in the Cities of Auburn and Grass Valley, which accounts for a significant portion of the population with the trade area, has been lower than the unemployment rate in Nevada and Placer Counties and the State. Employment in the Cities of Auburn and Grass Valley has been growing faster than at the state or county levels.

As stated above, the Draft EIR analysis did not assume a linear growth in income based on data from the robust growth of the 1990s; rather, ERA adjusted downward its assumptions about annual real income growth from the observed 1.9 percent per year to 0.2 to 0.3 percent per year.

Response to Third Paragraph

Simply speaking, the closure of stores is not considered an urban decay impact. As used in CEQA, the term "urban decay" was introduced by the Court of Appeal in the case entitled, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184. In that decision, the court required the City of Bakersfield to redo two EIRs for two proposed Wal-Marts because the documents both failed to address the possible indirect physical effects flowing from the direct economic effects of the two projects. Though the court does not expressly define "urban decay," the court seems to equate the concept with a "chain reaction of store closures and long-term vacancies, ultimately destroying existing neighborhoods and leaving decaying shells in their wake." (*Id.* at p. 1204.) Building upon this vision, the County understands urban decay to be physical deterioration that is so prevalent and substantial that it impairs the proper utilization of affected real estate or the health, safety, and welfare of the surrounding community. Physical deterioration includes, but is not limited to, abnormally high business vacancies, abandoned buildings and industrial sites, boarded doors and windows, parked trucks and long-term unauthorized use of properties and parking lots, extensive gang or offensive graffiti painted on buildings, dumping of refuse or overturned dumpsters on properties, dead trees or shrubbery and uncontrolled weed growth, or homeless encampments.

As the discussion in *Bakersfield Citizens* makes clear, mere economic competition, without more, does not create issues under CEQA, which is concerned with ecomomic impacts only insofar as they result in turn in reasonably foreseeable adverse *environmental* impacts.[13] The United States Supreme Court has interpreted the "Commerce Clause" of the U.S. Constitution as generally

[13] / See CEQA Guidelines, § 15131, subd. (a) ("[e]conomic or social effects of a project shall not be treated as significant effects on the environment").

prohibiting states and local governments from discriminating against interstate businesses that happen to be more competitive than local businesses seeking shelter from the rough and tumble of an open national marketplace. Thus, the Commerce Clause of the U.S. Constitution makes Placer County part of a *national common market* in which free competition, within reasonable constraints, must be permitted.[14]

California courts have likewise held that "[z]oning and building laws 'cannot be used unqualifiedly to restrict competition[,]' or simply to shield existing businesses from competition. While valid zoning regulations may affect competition and have other economic effects, a city does not have carte blanche to exclude a retail merchant that it, or some of its residents, do not like."[15] Consistent with these principles, CEQA case law does *not* "hold that, as a matter of law, physical change must be presumed from the establishment of a retail business."[16] Rather, as explained above, economic competition is only relevant under CEQA where the competition foreseeably results in adverse *physical* consequences such as urban decay. Such consequences should not be lightly presumed, in light of the benefits to consumers associated with competition among retailers.

In any event, the County stands by its conclusion that the Project will not cause urban decay. As noted under the Conclusions section of the Bohemia Retail Urban Decay Report on page 28,

> In ERA's opinion, the proposed project, if developed as a club store, a discount supercenter, or a home improvement center is not likely to cause blight or urban decay in Placer County for the following reasons:
>
> 1) Net new retail demand greatly exceeds supply by 2020 in most retail categories. In the club store scenario, projected sales exceed new demand in two categories through 2020. It is true that some existing retailers will be unable to compete with the new project. However, unmet retail demand means that there are opportunities for new tenants to compete effectively against the new store in other retail categories.
>
> 2) While retail supply by the proposed project exceeds new retail demand for some categories by 2015, any potential vacancies created by the new store can be occupied by retailers that operate in the categories where demand exceeds supply. Also, looking at historic data we have seen that periods of declines in sales, which is a particular type of spending shift, have not led to significant urban decay in the Auburn area.
>
> 3) The new store creates shopping opportunities which will attract customers from the Grass Valley area and trade area residents who are currently traveling to places like Rocklin to shop at club stores, discount supercenters, or home improvement centers.

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[14] / See U.S. Const., art. 1, § 3, cl. 8; *C&A Carbone, Inc. v. Town of Clarkstown, N.Y.* (1994) 511 U.S. 383, 392 [114 S.Ct. 1677] ("[d]iscrimination against interstate commerce in favor of local business or investment is *per se* invalid, save in a narrow class of cases in which the municipality can demonstrate, under rigorous scrutiny, that it has no other means to advance a legitimate local interest") (emphasis in original) (*Carbone*).

[15] / *Friends of Davis v. City of* Davis (2000) 83 Cal.App.4th 1004, 1013 (*Friends of Davis*) (citations omitted).

[16] / *Friends of Davis, supra,* 83 Cal.App.4th at p. 1020.

> This may have a positive spillover effect on other retailers in the area as a result of the added traffic.

ERA's analysis and conclusions represent the best efforts of the analysis's professional authors, based on their review of quantitative data and many other sources of evidence obtained through direct research regarding the market area potentially affected by the project. Their conclusions reflect all of this information, viewed in light of their broader knowledge and professional education and experience. Because real estate economics is not an exact science , the County acknowledges that it cannot guarantee that ERA's predictions of future market conditions will come true in all particularsbut in putting together this EIR has relied on the best professional judgments and opinions of experts in various technical and scientific disciplines. All such personsshould undertake "some degree of forecasting" in preparing their analyses, but should stop short of addressing topics "too speculative for evaluation." (CEQA Guidelines, §§ 15144 & 15145.) In the present circumstances, the opinions of knowledgeable retail brokers regarding retenanting potential for smaller vacancies were and are a legitimate source of information to rely upon for an analysis of this type. ERA considered those opinions together with several other factors in reaching its findings about the potential for urban decay.

Notably, the appellants did not submit any expert evidence to challenge or refute the expert analysis supplied by ERA. Instead, appellant's attorney merely attacked the analysis, making the erroneous allegations mentioned above. In a similar context, the Court of Appeal has emphasized that contentious assertions by attorneys do not rise to the level of substantial evidence.[17] Even if appellant had supplied expert evidence, however, the County would still be entitled to rely on the conclusions of ERA, which had no reason not to be fair and objective in that its contractual relationship is with the County, not the applicant. "Disagreement amongst experts does not make an EIR inadequate."[18]

B. Deficient Retail Trade Area and False Conclusions

The County also disagrees with the appellant's attack on the "trade area" used by ERA in conducting its analysis of economic impacts and the potential for urban decay. The appellant is simply wrong in assuming that substantial numbers of people would travel from as far away as the Sacramento metropolitan area to purchase goods in the greater Auburn area. Such long trips would be irrational and wasteful for people living so far away from Auburn, as there are numerous "club stores" and "supercenters" much closer to even communities on the outer edge of the Sacramento region (e.g., Roseville, Rocklin and Loomis) that could provide these residents with far more convenient shopping opportunities at prices no higher than those that are expected for the ultimate retailer in the Bohemia project.

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[17] / See *Pala Band of Mission Indians v. County of San Diego* (1998) 68 Cal.App.4th 556, 578-580. See also CEQA Guidelines, § 15384, subd. (a) ("Argument . . . does not constitute substantial evidence").

[18] / CEQA Guidelines, § 15151. See also *Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal.3d 376, 409 [It is "well established that disagreement among experts does not make an EIR inadequate"], internal quotations omitted; *Browning-Ferris Industries v. City Council* (1986) 181 Cal.App.3d 852, 863 ["An administrative agency may choose between differing expert opinions"].

As described on especially page 7 of the Urban Decay Analysis, the retail trade area was defined to encompass those areas around the project site that are not currently served by similar retailers. Certain urban centers are not included because of the simple fact that these population centers are already served by similar retailers; therefore, there is no reason for people in those areas to come and shop at the Bohemia Retail store. The effect of these far more convenient shopping opportunities is that the proposed Bohemia Retail store would not compete with similar retailers in these urban population centers. Therefore, "By focusing the Retail Trade Area on lower population areas with less existing retail establishments and less retail demand," contrary to the assertions in the Appeal, the urban decay data regarding existing and projected retail supply and demand is not skewed, and the urban decay effects of the project are not minimized.

Although the appellant refers to a "supercenter in the Loomis area," the County and ERA believe that the appellant must be referring to the so-called Rocklin Crossings Project, which is located in the City of Rocklin, albeit close to that municipality's border with Loomis (at I-80/Sierra College Boulevard interchange). For reasons discussed below, the existence of this project – which is still in litigation as of September 2010 – is not a basis for including Loomis or Rocklin within the trade area for the Bohemia project.

From a methodological perspective, it does not make sense to include the Rocklin Crossings project in the Bohemia project's Urban Decay Analysis because the Rocklin Crossing project will serve populations in areas not included in the Bohemia project's retail trade area. ERA did not expect patrons from the Rocklin Crossings center's trade area to shop at Bohemia Retail because this would simply be uneconomical, at least from a travel perspective. Why would people residing in the Rocklin/Loomis area drive further north to shop at the Bohemia Retail store when they could purchase the same goods closer to home? Again, this is why the Retail Trade Area for the Bohemia Retail analysis included areas that do not already have similar retailers in close proximity, including Auburn, Colfax, and unincorporated areas of Placer County such as Foresthill, Meadow Vista, and North Auburn. The Bohemia trade area also includes Grass Valley, Nevada City and unincorporated areas of Nevada County such as Alta Sierra, Penn Valley, and Lake Wildwood. The proposed store will capture sales mostly from Auburn, North Auburn and the portion of Nevada County that is not served by Yuba City's retail.

Similar to the Loomis/Rocklin example, from a methodological perspective it does not make sense to include retail centers in the City of Sacramento, or even the unincorporated portions of the County of Sacramento, in the Bohemia Retail Urban Decay Analysis. It is unreasonable to assume that people residing in Sacramento would drive to the Bohemia Retail store when they could purchase the same goods at similar stores in Sacramento near their home. Similarly, people residing in the Auburn area would not drive to Sacramento to obtain what they could at the Bohemia Retail store.

C. No Urban Decay Analysis of Supercenters

The contention in the Appeal is simply incorrect regarding its statement that the EIR did not assess the urban decay impacts of supercenters. As clearly stated on page 18 of the Bohemia Retail Urban Decay Analysis and page 16-15 of the Draft EIR,

The second scenario assumes the construction of a discount superstore, such as a Walmart superstore. Superstores stock everything a regular Walmart discount store does, but also includes a full-service supermarket and may have a garden center, pet shop, pharmacy, tire & lube express, optical center, one-hour photo processing lab, portrait studio, and numerous alcove shops, such as cellular phone stores, hair and nail salons, and video rental stores. Walmart superstores range in size between 98,000 s.f. and 246,000 s.f. ERA assumed that the superstore's average sales per square foot are $513 and the average superstore is 187,000 s.f.

III. Cumulative Impacts Analysis

A. Insufficient Project Analysis

There are a number of flaws in appellant's contention that the EIR fails to properly analyze the cumulative impacts of the No Canal Street Alternative. The primary flaw in the various arguments is the implied notion that the County was under an obligation to prepare a separate cumulative impact analysis for this alternative in addition to the cumulative impact analysis for the originally proposed project. Although, as explained earlier, the No Canal Street alternative has a different primary point of access than the originally proposed project, this difference is immaterial in the context of a cumulative impact analysis, which by definition puts a proposed project in a larger geographic and temporal context and attempts to ascertain whether its impacts, viewed in such an expanded context, are cumulatively considerable. Thus, the cumulative impact analysis prepared for the originally proposed project suffices to address the cumulative impacts of the No Canal Street Alternative. Even so, as discussed below, the County has separately analyzed the cumulative traffic impacts of the No Canal Street Alternative.

First Paragraph

Although Omni-Means performed an in-house review of the cumulative traffic model results for the originally proposed project during the preparation of the Draft EIR and determined that it is unlikely any additional cumulative intersection impacts would occur should the No Canal Street Access Alternative be implemented instead of the project, subsequent to the filing of the Appeal, the decision was made by the County to prepare a quantitative Cumulative Plus No Canal Street Access Alternative analysis. For reasons mentioned above, this new analysis was unnecessary under CEQA, but was undertaken for purposes of full disclosure and out of respect for the sentiments of the members of the appellant organization. Because the only differences between the originally proposed project and the No Canal Street Alternative occur on Highway 49, that facility was the primary focus of the new study. As the discussion below explains, this new analysis did not reveal any new significant effects or any substantial increases in the severity of any previously identified effects.

Without the Canal Street access, traffic volumes (turning movements) will be somewhat different at the following intersections when compared to the Cumulative conditions with Canal Street access. Impacts to all other study intersections under the Cumulative Plus Project without the Canal Street access will be substantially similar to impacts identified under the Cumulative Plus Project with the

Canal Street access.

7. SR 49/Kemper Road/New Airport Road.
8. SR 49/Hulbert Way (north)/Retail Way (Primary Access).
9. SR 49/Luther Road.
13. Bell Road/New Airport Road.
18. Luther Road/Canal Street.

Table 1 provides a summary of the Cumulative Plus No Canal Street Access Alternative peak hour intersection levels of service for the Discount Club alternative without the Canal Street access (see Appendix B to this Addendum for the associated technical worksheets).

Table 1
Cumulative Plus No Canal Street Access Alternative (Discount Club): Intersection LOS

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
7	SR 49/Kemper Road/New Airport Road	Signal	E	21.0	C	-	27.5	C	-
8	SR 49/Hulbert Way (north)/Retail Way	Signal	E	11.4	B	-	26.8	C	-
9	SR 49/Luther Road	Signal	E	21.5	C	-	38.5	D	-
13	**Bell Road/New Airport Road**	**Signal (Circular 212)**	C	**0.926**	**E**	-	**1.296**	**F**	-
18	**Luther Road/Canal Street**	**TWSC**	C	**29.2**	**D**	**No**	**47.6**	**E**	**Yes**

OVR = overflow conditions, Bolded entries indicate intersections operating at deficient LOS
TWSC = Two Way Stop Control; AWSC = All Way Stop Control; Warrant = Caltrans peak hour signal warrant

The intersections of Bell Road/New Airport Road (Intersection 13) and Luther Road/Canal Street (Intersection 18) are projected to operate at unacceptable LOS under the Cumulative Plus Project (Discount Club) conditions without the Canal Street access. However, these intersections were also projected to operate at unacceptable LOS under Cumulative Plus Project (Discount Club) conditions (with Canal Street access).

As noted previously, impacts to all other study intersections under the Cumulative Plus Project (Discount Club) without the Canal Street access will be similar to impacts identified under the Cumulative Plus Project (Discount Club) with the Canal Street access. The following intersections (in addition to Intersections 13 and 18) that were projected to operate at unacceptable LOS under the Cumulative Plus Project (Discount Club) conditions with the Canal Street access will operate at unacceptable LOS under the Cumulative Plus Project (Discount Club) conditions without the Canal Street access:

- Intersection #16) Undercrossing Road/I-80 EB Ramps
- Intersection #20) Luther Road/Bowman Road

Table 2 provides a summary of the Cumulative Plus No Canal Street Access Alternative peak hour intersection levels of service for the Superstore alternative without the Canal Street access.

Table 2
Cumulative Plus No Canal Street Access Alternative (Superstore): Intersection LOS

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
7	SR 49/Kemper Road/New Airport Road	Signal	E	21.0	C	-	28.0	C	-
8	SR 49/Hulbert Way (north)/Retail Way	Signal	E	13.8	B	-	27.8	C	-
9	SR 49/Luther Road	Signal	E	22.7	C	-	38.6	D	-
13	**Bell Road/New Airport Road**	**Signal (Circular 212)**	**C**	**0.926**	**E**	-	**1.299**	**F**	-
18	**Luther Road/Canal Street**	**TWSC**	**C**	**30.1**	**D**	**No**	**48.0**	**E**	**Yes**

OVR = overflow conditions, Bolded entries indicate intersections operating at deficient LOS
TWSC = Two Way Stop Control; AWSC = All Way Stop Control; Warrant = Caltrans peak hour signal warrant

The intersections of Bell Road/New Airport Road (Intersection 13) and Luther Road/Canal Street (Intersection 18) are projected to operate at unacceptable LOS under the Cumulative Plus Project (Superstore) conditions without the Canal Street access. However, as mentioned above, these intersections were also projected to operate at unacceptable LOS under Cumulative Plus Project (Superstore) conditions (with Canal Street access).

As noted previously, impacts to all other study intersections under the Cumulative Plus Project (Superstore) without the Canal Street access will be similar to impacts identified under the Cumulative Plus Project (Superstore) with the Canal Street access. The following intersections (in addition to Intersections 13 and 18) that were projected to operate at unacceptable LOS under the Cumulative Plus Project (Superstore) conditions with the Canal Street access will operate at unacceptable LOS under the Cumulative Plus Project (Superstore) conditions without the Canal Street access:

- Intersection #4) SR 49/ Bell Road
- Intersection #16) Undercrossing Road/I-80 EB Ramps
- Intersection #20) Luther Road/Bowman Road

Therefore, the above additional analysis serves to substantiate the following statement provided in the Alternatives Chapter of the Draft EIR regarding the No Canal Street Access Alternative: "Therefore, impacts related to transportation and circulation under this alternative would be similar to the proposed project."

Additional traffic information regarding the southbound left turn at the Primary Access

Omni-Means, the traffic consultant for the project, has estimated that the southbound left turns at the Primary Access (i.e., SR 49/Hulbert Way (north)/Retail Way) intersection will increase by 24 vehicles during the PM peak hour under the under the Cumulative Plus Project conditions. It is expected that the 95th percentile queue under the Cumulative Plus Project (Superstore) without the Canal Street access during the PM peak hour (with the increase of 24 vehicles) will be similar to the 95th percentile queue under the Cumulative Plus Project (Superstore) with the Canal Street.

Second Paragraph

The Appeal comments are correct in that the cumulative air and noise studies that were prepared for the project were based on the traffic data. However, for reasons explained earlier, the Appeal comments are incorrect in assuming that a full cumulative traffic analysis of the No Canal Street Access Alternative was needed in the Draft EIR in order to adequately evaluate the potential cumulative air and noise impacts associated with the No Canal Street Access Alternative. Regarding air quality, the reason for this is because, per PCAPCD guidance, the cumulative air quality analysis is based upon project-level data -- the difference in the cumulative analysis is simply the distinct cumulative thresholds established by PCAPCD. As explained in connection with the air quality arguments made by appellant, the difference between the originally proposed project and the Canal Street Alternative are essentially irrelevant from an air quality standpoint. Therefore, the project-level traffic analysis prepared for the No Canal Street Access Alternative as part of the Draft EIR was sufficient to evaluate cumulative air quality impacts resulting from the No Canal Street Access Alternative, which as discussed above, would be the same as the proposed project because the number of new vehicle trips would be the same for the proposed project and the No Canal Street Access Alternative.

While the Draft EIR determined that the proposed project would not create operational air quality emission impacts at the project-level, the Draft EIR determined that the proposed project's incremental contribution to cumulative air quality impacts, using PCAPCD's cumulative thresholds, would be considered a significant impact. Accordingly, the Draft EIR included several mitigation measures (see MM 18-9 (a-h)) to reduce the project's contribution to cumulative air quality impacts to the maximum extent feasible; however, the DEIR determined that the impact would remain significant and unavoidable. These conclusions apply with equal force to the No Canal Street Alternative. As stated on page 1-14 of the *Introduction* Chapter of the Final EIR, "It should also be noted that all air quality-related mitigation measures identified for the proposed project in Table 2-1 of Chapter 2, Executive Summary, of the Draft EIR would be required for the No Canal Access Alternative." Therefore, it can be concluded here that, as with the originally proposed project, the No Canal Street Access Alternative would have less-than-significant project-level operational air quality impacts, and a significant and unavoidable incremental contribution toward cumulative air quality impacts, but will be required to implement Draft EIR mitigation measures 18-9 (a-h). Similarly, for greenhouse gases, like the originally proposed project, the No Canal Street Access Alternative would have a significant and unavoidable impact but would be required to implement all components of Mitigation Measure 18-10, which would substantially reduce greenhouse gas emissions.

Regarding cumulative noise impacts, it was not necessary to have a full cumulative traffic analysis of the No Canal Street Access Alternative in order to adequately evaluate the potential cumulative noise impacts associated with the No Canal Street Access Alternative. This can be demonstrated by reviewing Impact 18-11 of the *Cumulative Impacts and Other CEQA Sections* chapter, which states in part:

> As shown in Tables 18-17 and 18-18, the project-related cumulative traffic noise increases associated with both development options would result in a cumulative noise increases to the following four study area roadway segments:
>
> - SR 49 – Between Bell Road and Willow Creek Drive (+1 dB);
> - Canal Street – North of Project Driveway (+1 dB);
> - Canal Street – Project Driveway to Luther Road (+2 dB); and
> - Atwood Road – West of SR 49 to east of SR 49 (+1 dB).
>
> The predicted cumulative noise increases for each of the four roadway segments are not predicted to exceed County noise standards illustrated in Table 8-7 within Chapter 8 of the Draft EIR. All associated cumulative noise increases along the study area roadways are considered small incremental increases to the existing and future noise environment. Consequently, the total noise increase of the proposed project would be below the normally perceptible range and below the County threshold of significance, and would not be considered to have a cumulatively considerable incremental contribution to the surrounding cumulative noise environment. Therefore, the proposed project would result in a ***less-than-significant*** cumulative noise impact.

As stated above, the same number of vehicle trips would be generated by the originally proposed project and the No Canal Street Access Alternative; and while the No Canal Street Access Alternative would result in the redistribution of certain vehicle trips on the surrounding roadway network, the redistributed trips would place a larger percentage of the project's vehicles along SR 49, particularly at the Primary Access, locations which do not have any surrounding residential sensitive receptors.

B. Insufficient Cumulative Supercenter Analysis

Appellant's argument that the EIR lacks an adequate analysis of the cumulative impacts of supercenters appears to be premised on the mistaken assumption, addressed above, that the EIR did not include any analysis of the impacts of a supercenter at the project site. Because that earlier argument was based on incorrect information, the same is true of appellant's allegation that "the cumulative analysis does not properly analyze the impact of supercenters." Furthermore, as explained below, the cumulative analysis prepared on the subject of urban decay took express account of other existing and proposed major retail projects in cumulatively affected areas.

As discussed in Impact 18-17 of the *Cumulative Impacts and Other CEQA Sections* chapter of the Draft EIR,

> In order to analyze the proposed project socio-economic impacts, the project must be considered in connection with the effects of other current projects, and the effects of probable future projects. The socio-economic analysis discusses the socio-economic impacts of the proposed project in conjunction with the existing retail, potential Target Expansion, Home Depot, Auburn Creekside Center, and other potential retail in the area. The socio-economic analysis includes projected retail demand, retail sales, and Urban Decay through the year 2020. Therefore, as socio-economic impacts are cumulative by nature, consistent with the conclusions in Chapter 16, Socio-Economics, impacts related to cumulative socio-economics

would be less-than-significant.

Furthermore, as mentioned above, as clearly stated on page 18 of the Bohemia Retail Urban Decay Analysis and page 16-15 of the Draft EIR,

> The second scenario assumes the construction of a discount superstore, such as a Walmart superstore. Superstores stock everything a regular Walmart discount store does, but also includes a full-service supermarket and may have a garden center, pet shop, pharmacy, tire & lube express, optical center, one-hour photo processing lab, portrait studio, and numerous alcove shops, such as cellular phone stores, hair and nail salons, and video rental stores. Walmart superstores range in size between 98,000 s.f. and 246,000 s.f. ERA assumed that the superstore's average sales per square foot are $513 and the average superstore is 187,000 s.f.

By clear implication, the cumulative socio-economic analysis did in fact consider the potential effects of a supercenter, including Walmart.

APPENDIX A

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Summary Report for Winter Emissions (Pounds/Day)

File Name: I:\Projects\Active\Placer County\Bohemia Retail Project\Technical Reports\Air Quality\No Canal St Alternative\Discount Club\No Canal Street Alternative Option 1 Discount Club with mitigation.urb924

Project Name: Bohemia Retail - No Canal Street Alternative - Discount Club

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	12.99	148.29	62.09	0.12	115.26	6.46	121.72	24.13	5.94	30.07	18,311.78
2010 TOTALS (lbs/day mitigated)	12.99	132.29	62.09	0.12	12.74	3.60	16.34	2.72	3.31	6.03	18,311.78
2011 TOTALS (lbs/day unmitigated)	6.59	40.73	33.10	0.01	80.06	2.38	82.44	16.73	2.18	18.91	5,244.51
2011 TOTALS (lbs/day mitigated)	6.59	29.88	33.10	0.01	8.62	0.24	8.86	1.81	0.22	2.03	5,244.51
2012 TOTALS (lbs/day unmitigated)	9.05	53.07	41.58	0.02	80.08	3.39	83.48	16.74	3.12	19.85	6,815.08
2012 TOTALS (lbs/day mitigated)	9.05	39.13	41.58	0.02	8.64	0.36	9.00	1.82	0.33	2.15	6,815.08

428

8/31/2010 10:11:29 AM

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.02	1.51	1.27	0.00	0.00	0.00	1,809.60
TOTALS (lbs/day, mitigated)	0.93	1.51	1.27	0.00	0.00	0.00	1,809.60
Percent Reduction	8.82	0.00	0.00	NaN	NaN	NaN	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	47.01	58.65	431.74	0.34	65.50	12.66	34,114.20
TOTALS (lbs/day, mitigated)	42.59	53.14	391.11	0.31	59.34	11.47	30,904.08
Percent Reduction	9.40	9.39	9.41	8.82	9.40	9.40	9.41

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	48.03	60.16	433.01	0.34	65.50	12.66	35,923.80
TOTALS (lbs/day, mitigated)	43.52	54.65	392.38	0.31	59.34	11.47	32,713.68
Percent Reduction	9.39	9.16	9.38	8.82	9.40	9.40	8.94

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Summary Report for Winter Emissions (Pounds/Day)

File Name: I:\Projects\Active\Placer County\Bohemia Retail Project\Technical Reports\Air Quality\No Canal St Alternative\Free Standing Superstore\No Canal Street Alternative Option 2 Free Standing Discount Superstore.urb924

Project Name: Bohemia Retail - No Canal Street Alternative - Free Standing Discount Superstore

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	12.99	148.29	62.09	0.12	115.26	6.46	121.72	24.13	5.94	30.07	18,311.78
2010 TOTALS (lbs/day mitigated)	12.99	148.29	62.09	0.12	30.77	6.46	37.23	6.48	5.94	12.42	18,311.78
2011 TOTALS (lbs/day unmitigated)	6.59	40.73	33.10	0.01	80.06	2.38	82.44	16.73	2.18	18.91	5,244.51
2011 TOTALS (lbs/day mitigated)	6.59	39.20	33.10	0.01	21.19	2.07	23.26	4.43	1.90	6.34	5,244.51
2012 TOTALS (lbs/day unmitigated)	9.05	53.07	41.58	0.02	80.08	3.39	83.48	16.74	3.12	19.85	6,815.08
2012 TOTALS (lbs/day mitigated)	9.05	49.74	41.58	0.02	21.21	2.55	23.76	4.44	2.35	6.79	6,815.08

430

8/31/2010 9:33:38 AM

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.02	1.51	1.27	0.00	0.00	0.00	1,809.60
TOTALS (lbs/day, mitigated)	0.93	1.51	1.27	0.00	0.00	0.00	1,809.60
Percent Reduction	8.82	0.00	0.00	NaN	NaN	NaN	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	56.33	71.27	522.06	0.41	80.01	15.46	41,624.79
TOTALS (lbs/day, mitigated)	51.03	64.57	472.94	0.38	72.48	14.01	37,707.93
Percent Reduction	9.41	9.40	9.41	7.32	9.41	9.38	9.41

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	57.35	72.78	523.33	0.41	80.01	15.46	43,434.39
TOTALS (lbs/day, mitigated)	51.96	66.08	474.21	0.38	72.48	14.01	39,517.53
Percent Reduction	9.40	9.21	9.39	7.32	9.41	9.38	9.02

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Summary Report for Summer Emissions (Pounds/Day)

File Name: I:\Projects\Active\Placer County\Bohemia Retail Project\Technical Reports\Air Quality\No Canal St Alternative\Discount Club\No Canal Street Alternative Option 1 Discount Club with mitigation.urb924

Project Name: Bohemia Retail - No Canal Street Alternative - Discount Club

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	12.99	148.29	62.09	0.12	115.26	6.46	121.72	24.13	5.94	30.07	18,311.78
2010 TOTALS (lbs/day mitigated)	12.99	132.29	62.09	0.12	12.74	3.60	16.34	2.72	3.31	6.03	18,311.78
2011 TOTALS (lbs/day unmitigated)	6.59	40.73	33.10	0.01	80.06	2.38	82.44	16.73	2.18	18.91	5,244.51
2011 TOTALS (lbs/day mitigated)	6.59	29.88	33.10	0.01	8.62	0.24	8.86	1.81	0.22	2.03	5,244.51
2012 TOTALS (lbs/day unmitigated)	9.05	53.07	41.58	0.02	80.08	3.39	83.48	16.74	3.12	19.85	6,815.08
2012 TOTALS (lbs/day mitigated)	9.05	39.13	41.58	0.02	8.64	0.36	9.00	1.82	0.33	2.15	6,815.08

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AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.27	1.55	4.36	0.00	0.01	0.01	1,815.22
TOTALS (lbs/day, mitigated)	1.18	1.55	4.36	0.00	0.01	0.01	1,815.22
Percent Reduction	7.09	0.00	0.00	NaN	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	36.87	41.22	355.67	0.38	65.50	12.66	39,078.10
TOTALS (lbs/day, mitigated)	33.53	37.34	322.20	0.34	59.34	11.47	35,400.89
Percent Reduction	9.06	9.41	9.41	10.53	9.40	9.40	9.41

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	38.14	42.77	360.03	0.38	65.51	12.67	40,893.32
TOTALS (lbs/day, mitigated)	34.71	38.89	326.56	0.34	59.35	11.48	37,216.11
Percent Reduction	8.99	9.07	9.30	10.53	9.40	9.39	8.99

8/31/2010 9:32:45 AM

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: I:\Projects\Active\Placer County\Bohemia Retail Project\Technical Reports\Air Quality\No Canal St Alternative\Free Standing Superstore\No Canal Street Alternative Option 2 Free Standing Discount Superstore.urb924

Project Name: Bohemia Retail - No Canal Street Alternative - Free Standing Discount Superstore

Project Location: Placer County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	12.99	148.29	62.09	0.12	115.26	6.46	121.72	24.13	5.94	30.07	18,311.78
2010 TOTALS (lbs/day mitigated)	12.99	148.29	62.09	0.12	30.77	6.46	37.23	6.48	5.94	12.42	18,311.78
2011 TOTALS (lbs/day unmitigated)	6.59	40.73	33.10	0.01	80.06	2.38	82.44	16.73	2.18	18.91	5,244.51
2011 TOTALS (lbs/day mitigated)	6.59	39.20	33.10	0.01	21.19	2.07	23.26	4.43	1.90	6.34	5,244.51
2012 TOTALS (lbs/day unmitigated)	9.05	53.07	41.58	0.02	80.08	3.39	83.48	16.74	3.12	19.85	6,815.08
2012 TOTALS (lbs/day mitigated)	9.05	49.74	41.58	0.02	21.21	2.55	23.76	4.44	2.35	6.79	6,815.08

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AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.27	1.55	4.36	0.00	0.01	0.01	1,815.22
TOTALS (lbs/day, mitigated)	1.18	1.55	4.36	0.00	0.01	0.01	1,815.22
Percent Reduction	7.09	0.00	0.00	NaN	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	43.99	50.07	431.85	0.46	80.01	15.46	47,688.69
TOTALS (lbs/day, mitigated)	39.97	45.36	391.21	0.42	72.48	14.01	43,201.22
Percent Reduction	9.14	9.41	9.41	8.70	9.41	9.38	9.41

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	45.26	51.62	436.21	0.46	80.02	15.47	49,503.91
TOTALS (lbs/day, mitigated)	41.15	46.91	395.57	0.42	72.49	14.02	45,016.44
Percent Reduction	9.08	9.12	9.32	8.70	9.41	9.37	9.06

435

APPENDIX B

omni · means
ENGINEERS · PLANNERS

TECHNICAL MEMORANDUM

To:	Raney Planning & Management	**Date:**	September 14, 2010
Attn:	Nick Pappani	**Project:**	North Placer County Bohemia Retail Traffic Impact Analysis Report (TIAR)
From:	Omni Means		
Re:	Cumulative + Project Analysis without Canal Street	**Job No.:**	25-5676-04
		File No.:	C1313MEM010.DOC
CC:			

INTRODUCTION

This memorandum has been prepared to present the results of the *Cumulative Plus Project* analysis for the proposed Bohemia Retail Project without the Canal Street access.

Without the Canal Street access, traffic volumes (turning movements) will be significantly different at the following intersections when compared to the Cumulative conditions with Canal Street access. Impacts to all other study intersections under the *Cumulative Plus Project* without the Canal Street access will be similar to impacts identified under the *Cumulative Plus Project* with the Canal Street access.

7. SR 49/Kemper Road/New Airport Road.
8. SR 49/Hulbert Way (north)/Retail Way.
9. SR 49/Luther Road.
13. Bell Road/New Airport Road.
18. Luther Road/Canal Street.

Therefore, the *Cumulative Plus Project* without the Canal Street access has been analyzed at the five intersections identified above.

Tables 1A provides a summary of the *Cumulative Plus Project* peak hour intersection levels of service for the Club alternative without the Canal Street access.

TABLE 1A
CUMULATIVE PLUS PROJECT (DISCOUNT CLUB) CONDITIONS NO CANAL STREET ACCESS: INTERSECTION LOS

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
7	SR 49/Kemper Road/New Airport Road	Signal	E	21.0	C	-	27.5	C	-
8	SR 49/Hulbert Way (north)/Retail Way	Signal	E	11.4	B	-	26.8	C	-
9	SR 49/Luther Road	Signal	E	21.5	C	-	38.5	D	-
13	**Bell Road/New Airport Road**	**Signal (Circular 212)**	**C**	**0.926**	**E**	**-**	**1.296**	**F**	**-**
18	**Luther Road/Canal Street**	**TWSC**	**C**	**29.2**	**D**	**No**	**47.6**	**E**	**Yes**

OVR = overflow conditions, Bolded entries indicate intersections operating at deficient LOS
TWSC = Two Way Stop Control; AWSC = All Way Stop Control; Warrant = Caltrans peak hour signal warrant

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437

The intersections of Bell Road/New Airport Road (intersection 13) and Luther Road/Canal Street (intersection 18) are projected to operate at unacceptable LOS under the *Cumulative Plus Project (Discount Club)* conditions without the Canal Street access. These intersections were also projected to operate at unacceptable LOS under *Cumulative Plus Project (Discount Club)* conditions (with Canal Street access).

As noted previously, impacts to all other study intersections under the *Cumulative Plus Project (Discount Club)* without the Canal Street access will be similar to impacts identified under the *Cumulative Plus Project (Discount Club)* with the Canal Street access. The following intersections (in addition to intersections 13 and 18) that were projected to operate at unacceptable LOS under the *Cumulative Plus Project (Discount Club)* conditions with the Canal Street access will operate at unacceptable LOS under the *Cumulative Plus Project (Discount Club)* conditions without the Canal Street access:

- Intersection #16) Undercrossing Road/I-80 EB Ramps
- Intersection #20) Luther Road/Bowman Road

Tables 1B provides a summary of the *Cumulative Plus Project* peak hour intersection levels of service for the Club and Superstore alternatives without the Canal Street access.

TABLE 1B
CUMULATIVE PLUS PROJECT (SUPERSTORE) CONDITIONS NO CANAL STREET ACCESS: INTERSECTION LOS

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
7	SR 49/Kemper Road/New Airport Road	Signal	E	21.0	C	-	28.0	C	-
8	SR 49/Hulbert Way (north)/Retail Way	Signal	E	13.8	B	-	27.8	C	-
9	SR 49/Luther Road	Signal	E	22.7	C	-	38.6	D	-
13	**Bell Road/New Airport Road**	**Signal (Circular 212)**	**C**	**0.926**	**E**	**-**	**1.299**	**F**	**-**
18	**Luther Road/Canal Street**	**TWSC**	**C**	**30.1**	**D**	**No**	**48.0**	**E**	**Yes**

OVR = overflow conditions, Bolded entries indicate intersections operating at deficient LOS
TWSC = Two Way Stop Control; AWSC = All Way Stop Control; Warrant = Caltrans peak hour signal warrant

The intersections of Bell Road/New Airport Road (intersection 13) and Luther Road/Canal Street (intersection 18) are projected to operate at unacceptable LOS under the *Cumulative Plus Project (Superstore)* conditions without the Canal Street access. These intersections were also projected to operate at unacceptable LOS under *Cumulative Plus Project (Superstore)* conditions (with Canal Street access).

As noted previously, impacts to all other study intersections under the *Cumulative Plus Project (Superstore)* without the Canal Street access will be similar to impacts identified under the *Cumulative Plus Project (Superstore)* with the Canal Street access. The following intersections (in addition to intersections 13 and 18) that were projected to operate at unacceptable LOS under the *Cumulative Plus Project (Superstore)* conditions with the Canal Street access will operate at unacceptable LOS under the *Cumulative Plus Project (Superstore)* conditions without the Canal Street access:

- Intersection #4) SR 49/ Bell Road
- Intersection #16) Undercrossing Road/I-80 EB Ramps
- Intersection #20) Luther Road/Bowman Road

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Southbound Left Turn @ SR 49/Hulbert Way (north)/Retail Way

It is estimated that the southbound left turns at the SR 49/Hulbert Way (north)/Retail Way intersection will increase by 24 vehicles during the PM peak hour under the Under the *Cumulative Plus Project* conditions. It is expected that the 95th % queue under the *Cumulative Plus Project (Superstore)* without the Canal Street access during the PM peak hour (with the increase of 24 vehicles) will be similar to the 95th % queue under the *Cumulative Plus Project (Superstore)* with the Canal Street.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		0.97	1.00		1.00	0.91		1.00	0.91	
Frt		0.93		1.00	0.93		1.00	0.98		1.00	1.00	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1743		3433	1725		1770	4993		1770	5064	
Flt Permitted		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1743		3433	1725		1770	4993		1770	5064	
Volume (vph)	49	47	92	173	56	54	126	1727	237	50	1201	34
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	51	100	188	61	59	137	1877	258	54	1305	37
RTOR Reduction (vph)	0	36	0	0	37	0	0	15	0	0	3	0
Lane Group Flow (vph)	0	168	0	188	83	0	137	2120	0	54	1339	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		13.4		10.9	10.9		20.1	53.3		6.4	39.6	
Effective Green, g (s)		13.4		10.9	10.9		20.1	53.3		6.4	39.6	
Actuated g/C Ratio		0.13		0.11	0.11		0.20	0.53		0.06	0.40	
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		234		374	188		356	2661		113	2005	
v/s Ratio Prot		c0.10		c0.05	0.05		0.08	c0.42		0.03	c0.26	
v/s Ratio Perm												
v/c Ratio		0.72		0.50	0.44		0.38	0.80		0.48	0.67	
Uniform Delay, d1		41.5		42.0	41.7		34.6	18.9		45.2	24.8	
Progression Factor		1.00		1.00	1.00		0.69	0.53		1.15	0.63	
Incremental Delay, d2		10.4		1.1	1.7		0.6	2.2		2.7	1.5	
Delay (s)		51.9		43.1	43.4		24.5	12.2		54.7	17.2	
Level of Service		D		D	D		C	B		D	B	
Approach Delay (s)		51.9			43.2			12.9			18.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	19.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1583		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1583		1770	5085	1583	1770	5085	1583
Volume (vph)	41	0	26	67	0	94	57	1816	174	104	1324	38
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	0	28	73	0	102	62	1974	189	113	1439	41
RTOR Reduction (vph)	0	27	0	0	96	0	0	0	49	0	0	13
Lane Group Flow (vph)	45	1	0	73	6	0	62	1974	140	113	1439	28
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	3.6	2.6		6.4	5.4		7.8	63.2	63.2	11.8	67.2	67.2
Effective Green, g (s)	3.6	2.6		6.4	5.4		7.8	63.2	63.2	11.8	67.2	67.2
Actuated g/C Ratio	0.04	0.03		0.06	0.05		0.08	0.63	0.63	0.12	0.67	0.67
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	64	41		220	85		138	3214	1000	209	3417	1064
v/s Ratio Prot	c0.03	0.00		0.02	c0.00		0.04	c0.39		c0.06	c0.28	
v/s Ratio Perm									0.09			0.02
v/c Ratio	0.70	0.02		0.33	0.06		0.45	0.61	0.14	0.54	0.42	0.03
Uniform Delay, d1	47.7	47.5		44.8	44.9		44.0	11.1	7.4	41.5	7.5	5.5
Progression Factor	1.00	1.00		1.00	1.00		1.33	0.94	0.44	1.29	0.05	0.00
Incremental Delay, d2	29.5	0.2		0.9	0.3		1.7	0.6	0.2	2.2	0.3	0.0
Delay (s)	77.1	47.6		45.6	45.2		60.3	11.0	3.5	55.7	0.7	0.0
Level of Service	E	D		D	D		E	B	A	E	A	A
Approach Delay (s)		65.8			45.4			11.7			4.6	
Approach LOS		E			D			B			A	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.91		0.97	0.91	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1583	1770	1863	1583	1770	4967		3433	5066	
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1795	1583	1770	1863	1583	1770	4967		3433	5066	
Volume (vph)	22	7	14	139	3	378	21	1559	286	181	1266	33
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	8	15	151	3	411	23	1695	311	197	1376	36
RTOR Reduction (vph)	0	0	14	0	0	191	0	22	0	0	2	0
Lane Group Flow (vph)	0	32	1	151	3	220	23	1984	0	197	1410	0
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		4.9	4.9	13.7	13.7	25.7	6.0	53.4		12.0	59.4	
Effective Green, g (s)		4.9	4.9	13.7	13.7	25.7	6.0	53.4		12.0	59.4	
Actuated g/C Ratio		0.05	0.05	0.14	0.14	0.26	0.06	0.53		0.12	0.59	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		88	78	242	255	470	106	2652		412	3009	
v/s Ratio Prot		c0.02		c0.09	0.00	c0.06	0.01	c0.40		0.06	0.28	
v/s Ratio Perm			0.00			0.08						
v/c Ratio		0.36	0.01	0.62	0.01	0.47	0.22	0.75		0.48	0.47	
Uniform Delay, d1		46.0	45.2	40.7	37.3	31.4	44.8	18.1		41.1	11.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00	0.77	0.81		0.59	0.98	
Incremental Delay, d2		2.5	0.0	4.9	0.0	0.7	1.0	1.9		0.8	0.5	
Delay (s)		48.6	45.3	45.7	37.3	32.1	35.3	16.6		25.2	11.6	
Level of Service		D	D	D	D	C	D	B		C	B	
Approach Delay (s)		47.5			35.8			16.8			13.3	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Cumulative Plus Project (Club option)
AM peak hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #13 Bell Road/New Airport Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.926
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 0	1	0 1	0 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	21	126	81	121	32	29	171	829	12	122	1402	314
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	21	126	81	121	32	29	171	829	12	122	1402	314
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	23	137	88	132	35	32	186	901	13	133	1524	341
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	23	137	88	132	35	32	186	901	13	133	1524	341
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	23	137	88	132	35	32	186	901	13	133	1524	341
Saturation Flow Module:												
Sat/Lane:	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.14	0.86	1.00	0.79	0.21	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	196	1179	1375	1087	288	1375	1375	2750	1375	1375	2750	1375
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.06	0.12	0.12	0.02	0.14	0.33	0.01	0.10	0.55	0.25
Crit Volume:		160			166		186				762	
Crit Moves:		****			****		****				****	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	104	460	10	6	405	10	7	0	6	32	2	108
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	500	11	7	440	11	8	0	7	35	2	117
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		687										
pX, platoon unblocked												
vC, conflicting volume	451			511			1303	1196	505	1191	1196	446
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	451			511			1303	1196	505	1191	1196	446
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			99			92	100	99	77	99	81
cM capacity (veh/h)	1109			1054			101	166	567	149	166	613

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	113	511	7	451	14	35	120
Volume Left	113	0	7	0	8	35	0
Volume Right	0	11	0	11	7	0	117
cSH	1109	1700	1054	1700	163	149	584
Volume to Capacity	0.10	0.30	0.01	0.27	0.09	0.23	0.20
Queue Length 95th (ft)	8	0	0	0	7	22	19
Control Delay (s)	8.6	0.0	8.4	0.0	29.2	36.4	12.7
Lane LOS	A		A		D	E	B
Approach Delay (s)	1.6		0.1		29.2	18.1	
Approach LOS					D	C	

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		0.97	1.00		1.00	0.91		1.00	0.91	
Frt		0.93		1.00	0.92		1.00	0.98		1.00	0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1727		3433	1707		1770	4971		1770	5058	
Flt Permitted		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1727		3433	1707		1770	4971		1770	5058	
Volume (vph)	84	55	169	389	49	62	98	1856	326	68	2060	76
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	60	184	423	53	67	107	2017	354	74	2239	83
RTOR Reduction (vph)	0	34	0	0	35	0	0	19	0	0	3	0
Lane Group Flow (vph)	0	301	0	423	85	0	107	2352	0	74	2319	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		24.2		17.3	17.3		9.3	65.0		7.5	63.2	
Effective Green, g (s)		24.2		17.3	17.3		9.3	65.0		7.5	63.2	
Actuated g/C Ratio		0.19		0.13	0.13		0.07	0.50		0.06	0.49	
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		321		457	227		127	2486		102	2459	
v/s Ratio Prot		c0.17		c0.12	0.05		c0.06	c0.47		0.04	0.46	
v/s Ratio Perm												
v/c Ratio		0.94		0.93	0.38		0.84	0.95		0.73	0.94	
Uniform Delay, d1		52.2		55.7	51.4		59.6	30.8		60.2	31.7	
Progression Factor		1.00		1.00	1.00		0.71	0.33		0.79	0.41	
Incremental Delay, d2		33.8		24.6	1.0		21.7	5.3		11.2	4.7	
Delay (s)		86.0		80.3	52.5		63.9	15.4		58.6	17.8	
Level of Service		F		F	D		E	B		E	B	
Approach Delay (s)		86.0			74.2			17.5			19.1	
Approach LOS		F			E			B			B	

Intersection Summary			
HCM Average Control Delay	27.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1583		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1583		1770	5085	1583	1770	5085	1583
Volume (vph)	121	0	20	335	0	223	25	1935	253	320	2248	51
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	0	22	364	0	242	27	2103	275	348	2443	55
RTOR Reduction (vph)	0	21	0	0	227	0	0	0	68	0	0	9
Lane Group Flow (vph)	132	1	0	364	15	0	27	2103	207	348	2443	46
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	12.4	3.4		16.8	7.8		3.6	59.6	59.6	34.2	90.2	90.2
Effective Green, g (s)	12.4	3.4		16.8	7.8		3.6	59.6	59.6	34.2	90.2	90.2
Actuated g/C Ratio	0.10	0.03		0.13	0.06		0.03	0.46	0.46	0.26	0.69	0.69
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	169	41		444	95		49	2331	726	466	3528	1098
v/s Ratio Prot	0.07	0.00		c0.11	c0.01		0.02	c0.41		c0.20	0.48	
v/s Ratio Perm									0.13			0.03
v/c Ratio	0.78	0.01		0.82	0.15		0.55	0.90	0.29	0.75	0.69	0.04
Uniform Delay, d1	57.5	61.7		55.1	58.0		62.4	32.5	21.9	43.9	11.7	6.3
Progression Factor	1.00	1.00		1.00	1.00		0.77	0.60	0.18	1.18	1.42	2.16
Incremental Delay, d2	20.5	0.1		11.3	0.8		6.2	3.1	0.5	2.3	0.4	0.0
Delay (s)	78.0	61.8		66.4	58.7		54.4	22.6	4.5	54.1	17.0	13.6
Level of Service	E	E		E	E		D	C	A	D	B	B
Approach Delay (s)		75.7			63.3			20.9			21.5	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.91		0.97	0.91	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1786	1583	1770	1863	1583	1770	4964		3433	5073	
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1786	1583	1770	1863	1583	1770	4964		3433	5073	
Volume (vph)	135	22	35	168	19	326	61	1716	324	459	2145	35
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	24	38	183	21	354	66	1865	352	499	2332	38
RTOR Reduction (vph)	0	0	19	0	0	37	0	21	0	0	1	0
Lane Group Flow (vph)	0	171	19	183	21	317	66	2196	0	499	2369	0
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		15.1	15.1	16.1	16.1	36.7	5.9	62.2		20.6	76.9	
Effective Green, g (s)		15.1	15.1	16.1	16.1	36.7	5.9	62.2		20.6	76.9	
Actuated g/C Ratio		0.12	0.12	0.12	0.12	0.28	0.05	0.48		0.16	0.59	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		207	184	219	231	496	80	2375		544	3001	
v/s Ratio Prot		c0.10		c0.10	0.01	0.10	0.04	c0.44		c0.15	0.47	
v/s Ratio Perm			0.01			0.10						
v/c Ratio		0.83	0.11	0.84	0.09	0.64	0.82	0.92		0.92	0.79	
Uniform Delay, d1		56.2	51.4	55.7	50.5	40.9	61.5	31.7		53.9	20.3	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.26	1.05		0.98	0.98	
Incremental Delay, d2		22.8	0.3	23.2	0.2	2.7	41.6	6.6		16.0	1.6	
Delay (s)		78.9	51.7	78.8	50.6	43.6	118.9	39.9		68.6	21.5	
Level of Service		E	D	E	D	D	F	D		E	C	
Approach Delay (s)		74.0			55.4			42.2			29.7	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM Average Control Delay	38.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Cumulative Plus Project (Club option)
AM peak hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #13 Bell Road/New Airport Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	1.296
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 0	1	0 1	0 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	26	43	241	349	136	200	23	1570	28	128	1387	144
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26	43	241	349	136	200	23	1570	28	128	1387	144
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	28	47	262	379	148	217	25	1707	30	139	1508	157
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	47	262	379	148	217	25	1707	30	139	1508	157
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	28	47	262	379	148	217	25	1707	30	139	1508	157
Saturation Flow Module:												
Sat/Lane:	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.38	0.62	1.00	0.72	0.28	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	518	857	1375	989	386	1375	1375	2750	1375	1375	2750	1375
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.19	0.38	0.38	0.16	0.02	0.62	0.02	0.10	0.55	0.11
Crit Volume:			262		527			853		139		
Crit Moves:			****		****			****		****		

448

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	109	629	11	2	437	17	11	21	13	32	6	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	118	684	12	2	475	18	12	23	14	35	7	71
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		687										
pX, platoon unblocked												
vC, conflicting volume	493			696			1480	1424	690	1435	1421	484
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	493			696			1480	1424	690	1435	1421	484
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			100			85	81	97	59	95	88
cM capacity (veh/h)	1070			900			80	120	445	84	121	583

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	118	696	2	493	49	35	77
Volume Left	118	0	2	0	12	35	0
Volume Right	0	12	0	18	14	0	71
cSH	1070	1700	900	1700	132	84	440
Volume to Capacity	0.11	0.41	0.00	0.29	0.37	0.41	0.18
Queue Length 95th (ft)	9	0	0	0	39	41	16
Control Delay (s)	8.8	0.0	9.0	0.0	47.6	74.7	14.9
Lane LOS	A		A		E	F	B
Approach Delay (s)	1.3		0.0		47.6	33.5	
Approach LOS					E	D	

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		0.97	1.00		1.00	0.91		1.00	0.91	
Frt		0.93		1.00	0.93		1.00	0.98		1.00	1.00	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1742		3433	1725		1770	4991		1770	5065	
Flt Permitted		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1742		3433	1725		1770	4991		1770	5065	
Volume (vph)	49	47	93	180	56	54	128	1751	248	50	1217	34
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	51	101	196	61	59	139	1903	270	54	1323	37
RTOR Reduction (vph)	0	36	0	0	36	0	0	16	0	0	3	0
Lane Group Flow (vph)	0	169	0	196	84	0	139	2157	0	54	1357	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		13.4		11.0	11.0		19.4	53.3		6.3	40.2	
Effective Green, g (s)		13.4		11.0	11.0		19.4	53.3		6.3	40.2	
Actuated g/C Ratio		0.13		0.11	0.11		0.19	0.53		0.06	0.40	
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		233		378	190		343	2660		112	2036	
v/s Ratio Prot		c0.10		c0.06	0.05		0.08	c0.43		0.03	c0.27	
v/s Ratio Perm												
v/c Ratio		0.72		0.52	0.44		0.41	0.81		0.48	0.67	
Uniform Delay, d1		41.5		42.0	41.6		35.3	19.2		45.3	24.4	
Progression Factor		1.00		1.00	1.00		0.60	0.32		1.18	0.62	
Incremental Delay, d2		10.6		1.2	1.6		0.6	2.3		2.7	1.5	
Delay (s)		52.1		43.2	43.2		21.9	8.4		56.0	16.7	
Level of Service		D		D	D		C	A		E	B	
Approach Delay (s)		52.1			43.2			9.3			18.2	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1583		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1583		1770	5085	1583	1770	5085	1583
Volume (vph)	41	0	26	112	0	141	57	1811	201	137	1316	38
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	0	28	122	0	153	62	1968	218	149	1430	41
RTOR Reduction (vph)	0	27	0	0	141	0	0	0	63	0	0	15
Lane Group Flow (vph)	45	1	0	122	12	0	62	1968	155	149	1430	26
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	4.4	2.8		9.5	7.9		7.8	57.8	57.8	13.9	63.9	63.9
Effective Green, g (s)	4.4	2.8		9.5	7.9		7.8	57.8	57.8	13.9	63.9	63.9
Actuated g/C Ratio	0.04	0.03		0.10	0.08		0.08	0.58	0.58	0.14	0.64	0.64
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	78	44		326	125		138	2939	915	246	3249	1012
v/s Ratio Prot	c0.03	0.00		c0.04	c0.01		0.04	c0.39		c0.08	0.28	
v/s Ratio Perm									0.10			0.02
v/c Ratio	0.58	0.02		0.37	0.10		0.45	0.67	0.17	0.61	0.44	0.03
Uniform Delay, d1	46.9	47.3		42.5	42.7		44.0	14.5	9.9	40.5	9.1	6.6
Progression Factor	1.00	1.00		1.00	1.00		1.35	0.90	0.46	1.39	0.06	0.00
Incremental Delay, d2	9.9	0.2		0.7	0.3		1.7	0.9	0.3	3.2	0.3	0.0
Delay (s)	56.8	47.4		43.2	43.1		61.2	14.0	4.8	59.5	0.9	0.0
Level of Service	E	D		D	D		E	B	A	E	A	A
Approach Delay (s)		53.2			43.1			14.4			6.2	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.91		0.97	0.91	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1795	1583	1770	1863	1583	1770	4968		3433	5066	
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1795	1583	1770	1863	1583	1770	4968		3433	5066	
Volume (vph)	22	7	14	139	3	383	21	1576	286	190	1290	33
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	8	15	151	3	416	23	1713	311	207	1402	36
RTOR Reduction (vph)	0	0	14	0	0	191	0	22	0	0	2	0
Lane Group Flow (vph)	0	32	1	151	3	225	23	2002	0	207	1436	0
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		4.9	4.9	13.7	13.7	25.6	5.8	53.5		11.9	59.6	
Effective Green, g (s)		4.9	4.9	13.7	13.7	25.6	5.8	53.5		11.9	59.6	
Actuated g/C Ratio		0.05	0.05	0.14	0.14	0.26	0.06	0.54		0.12	0.60	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		88	78	242	255	469	103	2658		409	3019	
v/s Ratio Prot		c0.02		c0.09	0.00	c0.06	0.01	c0.40		0.06	0.28	
v/s Ratio Perm			0.00			0.08						
v/c Ratio		0.36	0.01	0.62	0.01	0.48	0.22	0.75		0.51	0.48	
Uniform Delay, d1		46.0	45.2	40.7	37.3	31.5	45.0	18.1		41.3	11.4	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.21		0.55	1.25	
Incremental Delay, d2		2.5	0.0	4.9	0.0	0.8	1.0	1.9		0.9	0.5	
Delay (s)		48.6	45.3	45.7	37.3	32.3	46.1	23.7		23.5	14.8	
Level of Service		D	D	D	D	C	D	C		C	B	
Approach Delay (s)		47.5			35.9			24.0			15.9	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Cumulative Plus Project (Walmart option)
AM peak hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #13 Bell Road/New Airport Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.926
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Split Phase						Split Phase						Protected						Protected					
Rights:	Include						Include						Include						Include					
Min. Green:	0		0		0		0		0		0		0		0		0		0		0		0	
Lanes:	0	1	0	0	1		0	1	0	0	1		1	0	2	0	1		1	0	2	0	1	
Volume Module:																								
Base Vol:	21	126		88			121		32		29		171	829		12			126	1402		314		
Growth Adj:	1.00	1.00		1.00			1.00		1.00		1.00		1.00	1.00		1.00			1.00	1.00		1.00		
Initial Bse:	21	126		88			121		32		29		171	829		12			126	1402		314		
User Adj:	1.00	1.00		1.00			1.00		1.00		1.00		1.00	1.00		1.00			1.00	1.00		1.00		
PHF Adj:	0.92	0.92		0.92			0.92		0.92		0.92		0.92	0.92		0.92			0.92	0.92		0.92		
PHF Volume:	23	137		96			132		35		32		186	901		13			137	1524		341		
Reduct Vol:	0	0		0			0		0		0		0	0		0			0	0		0		
Reduced Vol:	23	137		96			132		35		32		186	901		13			137	1524		341		
PCE Adj:	1.00	1.00		1.00			1.00		1.00		1.00		1.00	1.00		1.00			1.00	1.00		1.00		
MLF Adj:	1.00	1.00		1.00			1.00		1.00		1.00		1.00	1.00		1.00			1.00	1.00		1.00		
FinalVolume:	23	137		96			132		35		32		186	901		13			137	1524		341		
Saturation Flow Module:																								
Sat/Lane:	1375	1375		1375			1375		1375		1375		1375	1375		1375			1375	1375		1375		
Adjustment:	1.00	1.00		1.00			1.00		1.00		1.00		1.00	1.00		1.00			1.00	1.00		1.00		
Lanes:	0.14	0.86		1.00			0.79		0.21		1.00		1.00	2.00		1.00			1.00	2.00		1.00		
Final Sat.:	196	1179		1375			1087		288		1375		1375	2750		1375			1375	2750		1375		
Capacity Analysis Module:																								
Vol/Sat:	0.12	0.12		0.07			0.12		0.12		0.02		0.14	0.33		0.01			0.10	0.55		0.25		
Crit Volume:		160							166				186							762				
Crit Moves:		****							****				****							****				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	106	467	10	6	410	10	7	0	6	32	2	109
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	115	508	11	7	446	11	8	0	7	35	2	118
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		687										
pX, platoon unblocked												
vC, conflicting volume	457			518			1322	1213	513	1209	1213	451
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	457			518			1322	1213	513	1209	1213	451
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			99			92	100	99	76	99	81
cM capacity (veh/h)	1104			1048			97	162	561	145	162	608

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	115	518	7	457	14	35	121
Volume Left	115	0	7	0	8	35	0
Volume Right	0	11	0	11	7	0	118
cSH	1104	1700	1048	1700	158	145	579
Volume to Capacity	0.10	0.30	0.01	0.27	0.09	0.24	0.21
Queue Length 95th (ft)	9	0	0	0	7	22	19
Control Delay (s)	8.6	0.0	8.5	0.0	30.1	37.6	12.8
Lane LOS	A		A		D	E	B
Approach Delay (s)	1.6		0.1		30.1	18.4	
Approach LOS					D	C	

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-3%			0%			0%			0%	
Total Lost time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00		0.97	1.00		1.00	0.91		1.00	0.91	
Frt		0.93		1.00	0.92		1.00	0.98		1.00	0.99	
Flt Protected		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1727		3433	1707		1770	4970		1770	5058	
Flt Permitted		0.99		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1727		3433	1707		1770	4970		1770	5058	
Volume (vph)	84	55	169	391	49	62	99	1864	330	68	2065	76
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	60	184	425	53	67	108	2026	359	74	2245	83
RTOR Reduction (vph)	0	33	0	0	35	0	0	20	0	0	3	0
Lane Group Flow (vph)	0	302	0	425	85	0	108	2365	0	74	2325	0
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		23.8		18.5	18.5		9.2	64.4		7.3	62.5	
Effective Green, g (s)		23.8		18.5	18.5		9.2	64.4		7.3	62.5	
Actuated g/C Ratio		0.18		0.14	0.14		0.07	0.50		0.06	0.48	
Clearance Time (s)		4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		316		489	243		125	2462		99	2432	
v/s Ratio Prot		c0.17		c0.12	0.05		c0.06	c0.48		0.04	0.46	
v/s Ratio Perm												
v/c Ratio		0.95		0.87	0.35		0.86	0.96		0.75	0.96	
Uniform Delay, d1		52.6		54.6	50.3		59.8	31.6		60.4	32.4	
Progression Factor		1.00		1.00	1.00		0.70	0.32		0.79	0.42	
Incremental Delay, d2		38.2		15.1	0.9		24.2	6.3		13.1	5.7	
Delay (s)		90.8		69.7	51.2		65.9	16.4		60.7	19.3	
Level of Service		F		E	D		E	B		E	B	
Approach Delay (s)		90.8			65.6			18.6			20.6	
Approach LOS		F			E			B			C	

Intersection Summary			
HCM Average Control Delay	28.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	0.85		1.00	0.85		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1583		3433	1583		1770	5085	1583	1770	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1583		3433	1583		1770	5085	1583	1770	5085	1583
Volume (vph)	121	0	20	349	0	241	25	1932	263	328	2247	51
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	132	0	22	379	0	262	27	2100	286	357	2442	55
RTOR Reduction (vph)	0	21	0	0	245	0	0	0	72	0	0	9
Lane Group Flow (vph)	132	1	0	379	17	0	27	2100	214	357	2442	46
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	12.4	3.8		16.8	8.2		3.6	58.4	58.4	35.0	89.8	89.8
Effective Green, g (s)	12.4	3.8		16.8	8.2		3.6	58.4	58.4	35.0	89.8	89.8
Actuated g/C Ratio	0.10	0.03		0.13	0.06		0.03	0.45	0.45	0.27	0.69	0.69
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	169	46		444	100		49	2284	711	477	3513	1093
v/s Ratio Prot	0.07	0.00		c0.11	c0.01		0.02	c0.41		c0.20	0.48	
v/s Ratio Perm									0.14			0.03
v/c Ratio	0.78	0.01		0.85	0.17		0.55	0.92	0.30	0.75	0.70	0.04
Uniform Delay, d1	57.5	61.3		55.4	57.7		62.4	33.6	22.8	43.5	12.0	6.4
Progression Factor	1.00	1.00		1.00	1.00		0.76	0.60	0.18	1.18	1.42	2.12
Incremental Delay, d2	20.5	0.1		14.7	0.8		6.0	3.8	0.5	2.2	0.4	0.0
Delay (s)	78.0	61.4		70.1	58.4		53.5	23.8	4.5	53.6	17.4	13.6
Level of Service	E	E		E	E		D	C	A	D	B	B
Approach Delay (s)		75.6			65.3			21.9			21.8	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00	1.00	1.00	0.91		0.97	0.91	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1786	1583	1770	1863	1583	1770	4965		3433	5073	
Flt Permitted		0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1786	1583	1770	1863	1583	1770	4965		3433	5073	
Volume (vph)	135	22	35	168	19	328	61	1721	324	462	2154	35
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	147	24	38	183	21	357	66	1871	352	502	2341	38
RTOR Reduction (vph)	0	0	18	0	0	42	0	20	0	0	1	0
Lane Group Flow (vph)	0	171	20	183	21	315	66	2203	0	502	2378	0
Turn Type	Split		Perm	Split		pm+ov	Prot			Prot		
Protected Phases	4	4		8	8	1	5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		15.6	15.6	16.1	16.1	36.7	7.1	61.7		20.6	75.2	
Effective Green, g (s)		15.6	15.6	16.1	16.1	36.7	7.1	61.7		20.6	75.2	
Actuated g/C Ratio		0.12	0.12	0.12	0.12	0.28	0.05	0.47		0.16	0.58	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		214	190	219	231	496	97	2356		544	2935	
v/s Ratio Prot		c0.10		c0.10	0.01	0.10	0.04	c0.44		c0.15	0.47	
v/s Ratio Perm			0.01			0.10						
v/c Ratio		0.80	0.10	0.84	0.09	0.63	0.68	0.93		0.92	0.81	
Uniform Delay, d1		55.7	51.0	55.7	50.5	40.8	60.3	32.3		53.9	21.7	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.21	1.04		0.99	0.92	
Incremental Delay, d2		18.5	0.2	23.2	0.2	2.7	15.3	7.4		16.8	1.8	
Delay (s)		74.2	51.2	78.8	50.6	43.4	88.6	40.8		70.2	21.8	
Level of Service		E	D	E	D	D	F	D		E	C	
Approach Delay (s)		70.0			55.2			42.2			30.3	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM Average Control Delay	38.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Cumulative Plus Project (Walmart option)
AM peak hour

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #13 Bell Road/New Airport Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	1.299
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Split Phase						Split Phase						Protected						Protected					
Rights:	Include						Include						Include						Include					
Min. Green:	0		0		0		0		0		0		0		0		0		0		0		0	
Lanes:	0	1	0	0	1		0	1	0	0	1		1	0	2	0	1		1	0	2	0	1	
Volume Module:																								
Base Vol:		26		43		243		349		136		200		23		1570		28		130		1387		144
Growth Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:		26		43		243		349		136		200		23		1570		28		130		1387		144
User Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92		0.92	
PHF Volume:		28		47		264		379		148		217		25		1707		30		141		1508		157
Reduct Vol:		0		0		0		0		0		0		0		0		0		0		0		0
Reduced Vol:		28		47		264		379		148		217		25		1707		30		141		1508		157
PCE Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
MLF Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
FinalVolume:		28		47		264		379		148		217		25		1707		30		141		1508		157
Saturation Flow Module:																								
Sat/Lane:	1375		1375		1375		1375		1375		1375		1375		1375		1375		1375		1375		1375	
Adjustment:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Lanes:	0.38		0.62		1.00		0.72		0.28		1.00		1.00		2.00		1.00		1.00		2.00		1.00	
Final Sat.:		518		857		1375		989		386		1375		1375		2750		1375		1375		2750		1375
Capacity Analysis Module:																								
Vol/Sat:	0.05		0.05		0.19		0.38		0.38		0.16		0.02		0.62		0.02		0.10		0.55		0.11	
Crit Volume:					264				527						853				141					
Crit Moves:					****				****						****				****					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	109	631	11	2	439	17	11	21	13	32	6	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	118	686	12	2	477	18	12	23	14	35	7	71
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		687										
pX, platoon unblocked												
vC, conflicting volume	496			698			1484	1429	692	1439	1426	486
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	496			698			1484	1429	692	1439	1426	486
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			100			85	81	97	58	95	88
cM capacity (veh/h)	1068			899			79	120	444	84	120	581

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	118	698	2	496	49	35	77
Volume Left	118	0	2	0	12	35	0
Volume Right	0	12	0	18	14	0	71
cSH	1068	1700	899	1700	131	84	439
Volume to Capacity	0.11	0.41	0.00	0.29	0.37	0.42	0.18
Queue Length 95th (ft)	9	0	0	0	39	42	16
Control Delay (s)	8.8	0.0	9.0	0.0	48.0	75.6	14.9
Lane LOS	A		A		E	F	B
Approach Delay (s)	1.3		0.0		48.0	33.8	
Approach LOS					E	D	

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		