

Kings County Association of Governments

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Member Agencies: Cities of Avenal, Corcoran, Hanford and Lemoore, County of Kings

May 20, 2010

Mr. Doug Ito
ATTN: Jeff Lindberg
California Air Resources Board
1001 "I" Street
P.O. Box 2815
Sacramento, CA 95812

RE: KINGS COUNTY ASSOCIATION OF GOVERNMENTS DRAFT PROPOSED PERCENT PER CAPITA GREENHOUSE GAS EMISSIONS REDUCTION TARGET

Dear Mr. Ito:

Attached you will find the Kings County Association of Government's (KCAG) draft proposed percent per capita greenhouse gas emissions reduction target. KCAG took this opportunity to provide the Air Resources Board and the Regional Targets Advisory Committee with detailed information regarding the nature of Kings County's land use, economy, and resources and the role they play in travel patterns.

Because SB 375 is bottom-up legislation, KCAG's draft proposed targets have been developed with the active participation of our member agencies. KCAG began meeting with our member agencies in December 2009 to ensure our scenario provided smart growth strategies as outlined in our member agency general plans and the Kings County Locally-Preferred Blueprint Scenario. KCAG believes these draft proposed targets are reflective of smart growth strategies that fit within our rural framework.

KCAG submits these draft proposed targets with an appreciation for the complexity of this process moving forward. KCAG understands there are outstanding questions regarding quantifying particular pieces of data that, when resolved, may change the draft targets presented in this document. We are greatly looking forward to working with you further on this endeavor. Please do not hesitate to get in contact should you have any questions.

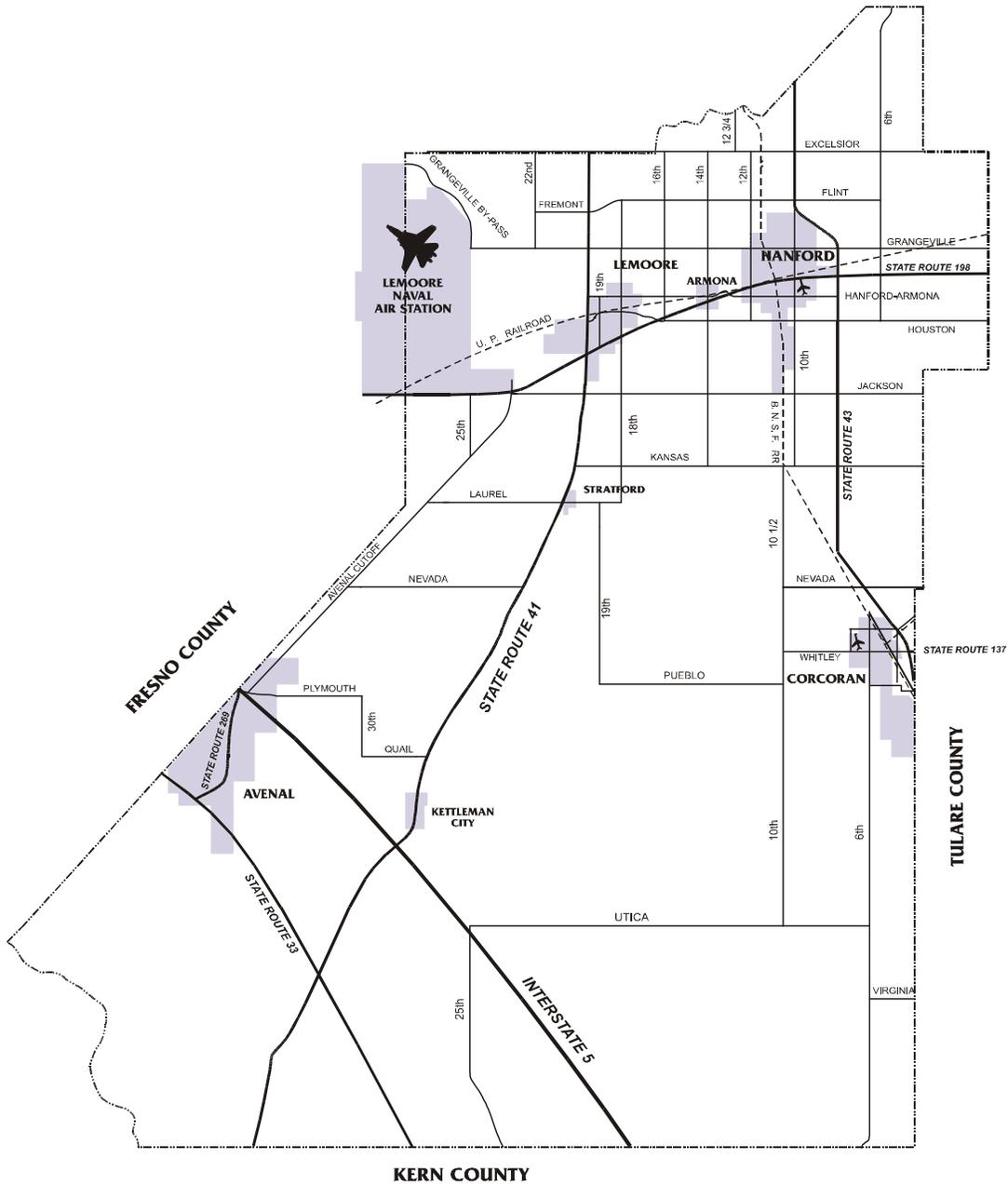
Sincerely,

KINGS COUNTY ASSOCIATION OF GOVERNMENTS

Terri King, Executive Director

Kings County Association of Governments

Draft Greenhouse Gas Emission Reduction Targets: Proposal to the California Air Resources Board



May 20, 2010

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I. Background

Signed into law in 2008, SB 375 has been touted as landmark legislation aimed at curbing sprawl through a more seamless coordination of land use and transportation planning efforts. Other states and countries are looking on as California begins its endeavor to implement this legislation through the visionary planning efforts of municipalities and counties.

As part of this process, California's 18 metropolitan planning organizations (MPOs) have been given the opportunity to propose percent per capita greenhouse gas (GHG) emission reduction targets to the Air Resources Board (ARB). This process has been detailed in the Regional Targets Advisory Committee (RTAC) report. ARB staff will then take finalized draft targets to their board in September 2010 for final approval.

Following the establishment of GHG reduction targets, the 18 MPOs will demonstrate how their regions will meet these targets by developing a document known as the Sustainable Communities Strategy (SCS). If an MPO is unable to meet the reduction with its SCS, an Alternative Planning Strategy (APS) must be developed to illustrate how the MPO's member agencies would meet the target with additional, unconstrained resources. The targets established at the September 2010 meeting will be the ones utilized in the MPOs' initial Sustainable Communities Strategies. KCAG's first SCS will be released in conjunction with our 2015 Regional Transportation Plan.

II. Introduction to Kings County

Kings County is a small, rural county in the San Joaquin Valley. It is adjacent to the counties of Kern, Fresno, Monterey, San Luis Obispo and Tulare. The cities of Avenal, Corcoran, Hanford, and Lemoore are within Kings County in addition to the unincorporated communities of Armona, Home Garden, Kettleman City, and Stratford. The population for Kings County is 156,289 with the county seat, Hanford, comprising the bulk of the population with 53,266 residents. The population estimates for all jurisdictions in Kings County are below.

Kings County Population 2010

Jurisdiction	Population
Avenal	16,236
Corcoran	25,692
Hanford	53,266
Lemoore	25,461
Incorporated	120,655
Balance Of County	35,634
County Total	156,289

Source: California Department of Finance

As part of the San Joaquin Valley, Kings County boasts some of the most productive and fertile farmland on earth. Because of this, the economy of Kings County is primarily agrarian. Dairy, agriculture, and agribusiness are at the crux of Kings County's economy. Companies like Del Monte and J.G. Boswell Company are among the biggest private sector employers in Kings County. In addition to agriculture, public facilities such as the Naval Air Station in Lemoore and the State prison facilities at Avenal and Corcoran also serve as major employers for the region. Home prices in Kings County are relatively lower when compared to the rest of the state. According to the Kings County Economic Development Corporation (EDC), the average home sale price was \$160,800 compared to \$524,000 for California.

III. Strategic Resource Areas: Benefits and Challenges

Though Kings County is a rural, centrally located area, in many ways it plays a vital role for the State of California and the nation. KCAG wanted to take this opportunity to highlight the importance of our resources both currently and in the future. These resources have an impact on travel patterns in our area that should be noted when considering reduction targets.

A. Green Technology and Land Use Planning

There are currently several potential solar facilities being planned in various locations throughout Kings County. One proposed facility, if built, will be one of the largest solar facilities on earth. Our region's rural nature, ample sunshine, and proximity to the power grid that runs along Interstate 5 make it an ideal location for solar facilities.

Solar businesses will also help our local jurisdictions attract green collar professionals and diversify Kings County's economy and workforce. With the addition of green infrastructure into our local economy, there are several key transportation and land use planning issues that have arisen and are being evaluated by planning agencies on a multijurisdictional level.

The presence of the Naval Air Station Lemoore requires special attention when considering the placement of solar facilities in Kings County. There are federal requirements that dictate how close solar facilities can be placed to air stations so as not to jeopardize the safety of particular flight paths in and out of the air station. The attractiveness of Kings County as a solar hub is one of the land use planning issues that precipitated the development of a Joint Land Use Study (JLUS) between KCAG, the County of Kings, County of Fresno, the City of Lemoore, and Naval Air Station Lemoore.

The JLUS will evaluate how to accommodate future growth while maintaining each agency's jurisdictional integrity and NAS Lemoore's mission. This study is currently underway and staff is optimistic this will generate a solution that will both facilitate green technology, smart growth and the continued successful operation of the base.

B. Interregional Travel and Kings County Employment

Smart growth strategies in Kings County must be contextually appropriate and take into account our agricultural economy, prison employment, the location of outlying communities, and potential for rural solar facilities within close proximity to Interstate 5.

1. State Prison Facilities

The prison facilities in Avenal and Corcoran are critical to our region's vitality. These prison facilities are major employers for the area and provide jobs for the region while simultaneously providing secure facilities for California's inmates. These facilities are critical within the larger statewide framework. While these facilities are a crucial resource for the state, the nature of prison employment is typically not conducive to short commutes. Working as a correctional officer frequently necessitates not residing in the same community as the prison itself. For this reason, there is interregional travel associated with prison employment that cannot be changed because of potential complications for correctional officers to live and work in the same community.

2. Outlying Communities

Hanford is the county seat of Kings County where many governmental services are provided. The largest majority of the county's population is situated in northern Kings County. Most of the major retail facilities where people shop for goods and services are also located in Hanford. However, the cities of Corcoran and Avenal are situated in the southern portion of Kings County located roughly 20 and 40 miles away respectively. Most county residents would need to travel these long distances to Hanford for services.

3. Agricultural Employment

Agricultural employment requires travel away from urban cores and traditional employment centers for most employees. Farming operations and agriculture processing industries are generally located outside of the urban cores, requiring employees to travel long distance to and from work. Kings County is estimated to have 18% of the workforce employed by these sectors, which will have a contributing factor in the estimated total vehicle trips per year within the county. These are sensitive issues that need to be considered when evaluating smart growth, interregional travel, and Kings County employment. It is unreasonable to assume that all urban land use planning strategies can be applied in a rural county like Kings with the same degree of success.

4. Solar Energy Facilities

Similarly, solar facilities, as facilities that are typically in rural, isolated areas, have an interregional trip nature. As mentioned before, part of Kings County's attractiveness as a solar hub is its proximity to the power grid that runs along Interstate 5. However, it must be noted that I-5 is located in the southwestern portion of Kings County and is some 30 miles away from its populous northeastern communities. This and the need to maintain a distance from NAS Lemoore for safety reasons further necessitate interregional travel for green collar professionals.

IV. Future Issues to Consider for Growth

A. Water Availability

With Kings County being partly comprised of the western San Joaquin Valley, water scarcity remains a key issue in future planning endeavors. Many farms on the west side have fallowed a portion of their non-permanent crop acreage due to drought and the drastic reduction in delivered water supply in recent years. This issue remains at the forefront of California political debate and will require a comprehensive solution for the economic prosperity of many of Kings County's communities. For the purposes of the target-setting process, it is important to consider these water issues as they greatly impact our county in future growth outcomes and, at this juncture, remain a huge unknown.

B. Population Density

Another issue to consider in the target-setting process is density and future growth. Like other counties in the San Joaquin Valley, Kings County has had a large influx in population over the last ten years. However, Kings County's growth is mainly found in its incorporated cities. Kings County's recent general plan update continues to reaffirm its policy of focusing unincorporated growth in the urban boundaries of its existing unincorporated communities where there is existing infrastructure.

These are smart growth strategies that, though on a smaller scale than other, larger California communities, should be considered and applauded. Below is a breakdown of growth rates by jurisdiction per the Department of Finance. These figures demonstrate a trend toward increased growth within existing urban centers, albeit on a smaller scale than more populous counties and regions.

**Kings County
Percent Population Growth
by Jurisdiction**

2000-2009

Jurisdiction	Percent
Avenal	8%
Corcoran	24%
Hanford	26%
Lemoore	26%
Incorporated	23%
Balance Of County	9%
County Total	20%

SOURCE: California Department of Finance

V. The Baseline Emissions Process

KCAG, along with the Madera County Transportation Commission (MCTC), Merced County Association of Governments (MCAG), San Joaquin Council of Governments (SJ COG), Stanislaus Council of Governments (StanCOG), and the Tulare County Association of Governments (TCAG), jointly submitted MPO-specific baseline emissions data to ARB for review. Per the RTAC report, EMFAC 2007 was used to compile this data.

In keeping with the methodology utilized by the “Big 4” MPOs (SACOG, SANDAG, SCAG and MTC), baseline emissions data was developed that excluded XX trips (trips that pass through and do not stop in each MPO) only. For KCAG, this information includes all interregional (IX-XI) trips (trips that begin/end in Kings County) as they are calculated using KCAG’s travel demand model.

In addition to the information detailed above, the six MPOs also submitted baseline emissions data that showed different ways to calculate for interregional (IX-XI) trips using the statewide model. Quantifying interregional travel (IX-XI trips) is an extremely complex issue that will need to be further evaluated as we move forward with SB 375 implementation. Recognizing the complexity of interregional travel as it pertains to the San Joaquin Valley, the eight San Joaquin Valley MPOs had Dowling Associates evaluate interregional (IX-XI) trips in the San Joaquin Valley using the statewide model. Three different methodologies for calculating interregional trip (IX-XI) data were developed for each of the MPOs using the statewide model. Below are descriptions of each method provided by Dowling Associates to the San Joaquin Valley MPOs.

- **San Joaquin Valley Only Vehicle Miles Traveled (VMT):** VMT associated with travel within the San Joaquin Valley on San Joaquin Valley links, outside of the origin MPO and the destination MPO.

- **VMT on San Joaquin Valley Links:** VMT associated with travel to/from San Joaquin Valley region (trips where either the origin or destination is within the San Joaquin Valley) on San Joaquin valley links, outside of the origin MPO and the destination MPO.
- **Total VMT:** VMT associated with travel to/from San Joaquin Valley region (trips where either the origin or the destination is within the San Joaquin Valley) on all statewide links, outside the origin MPO and the destination MPO.

The baseline emissions data provided different sets of results that are based on these assumptions. It should be noted that this information is based on the current statewide model and not the one that is in the process of being developed.

VI. The Target-Setting Process

KCAG has been tracking SB 375 from its initial introduction to the legislature to present. Though the MPOs are tasked with proposing draft targets to ARB, it is the local planners who will be implementing the legislation through context-sensitive smart growth strategies. With this in mind, in December 2009, KCAG began a series of meetings with local planners outlining the target-setting process and the implications for local agencies. These meetings have since segued into an ad hoc planning group that facilitates an informal discussion of planning issues of mutual interest that stretch beyond jurisdictional boundaries. Already, we are seeing SB 375 implementation help facilitate dialogue and coordination of planning efforts for the Kings County region.

As far as the target-setting process is concerned, in January 2010, KCAG began meeting with the local agencies to evaluate smart growth strategies being incorporated into local planning efforts. These were then incorporated into modeling scenarios for our target setting process. KCAG and the other San Joaquin Valley MPOs are looking to the future as far as model improvements and SB 375 implementation are concerned. The eight MPOs have hired Fehr and Peers to begin work on a model improvement plan (MIP) that will specifically look at these issues.

Between now and the time of our first Sustainable Communities Strategy (SCS), we understand that model improvements and data regarding the relationship between land use planning and greenhouse gas emissions may change. KCAG submits this information with the understanding that it is reflective of specific assumptions we have at this moment in time to quantify GHG reductions and smart growth strategies. These tools are likely to be improved before our first SCS and GHG numbers are subject to change because of these improvements.

A. KCAG's Travel Demand Model

The KCAG travel model has a base year of 2005 and a horizon year of 2035. It is a conventional 4-step travel demand forecasting model that is similar in structure to most other current area-wide models used for traffic forecasting. It uses land use, socioeconomic, and road network data to estimate facility-specific roadway traffic volumes. The travel demand model land use inputs (socioeconomic data) by traffic analysis zone (TAZ) include population related data (household data, broken down by household type and population

estimates), and employment related data (broken down into seven employment categories: retail, commercial, industrial, agricultural, government, education, and other).

B. Initial Data Gathering and Methodology

1. Meeting with Member Agencies

As previously mentioned, KCAG met with our local planners to review their latest general plan assumptions, data currently in KCAG's travel demand model and any best management practices. From there, staff incorporated the updated land use data and smart growth strategies into the travel demand model's land use spreadsheet. The travel demand model's outputs were then run through the State of California's air quality modeling software, EMFAC 2007, and divided by the total population to obtain percent per capita emission reduction targets. The future projections for population are based on our traffic model which are based on California Department of Finance (DOF) trend lined data.

It is important to note that, for the purposes of scenario development, population projection numbers should remain constant or a "zero sum game." As detailed below, the population numbers for the scenario and the baseline were consistent in 2020 and 2035. In the future, KCAG intends to periodically revisit this and work with local agencies to fine-tune the process and ensure that assumptions are still consistent and reflective of general plans.

Scenario and Year	Population
Base Year (2005)	145463
Base Scenario Interim Year (2020)	205749
Base Scenario Horizon Year (2035)	275121
SB 375 Interim Year (2020)	205749
SB 375 Horizon Year (2035)	275121

The RTAC indicated they wanted to ensure that targets were reflective of the recent economic downturn. The San Joaquin Valley as a whole has been hit particularly hard by the housing bust. When meeting with local planners, staff obtained land use updates on projects that may have been reflected in general plans but have now been delayed, indefinitely postponed, or outright cancelled due to the recession.

2. Baseline Emissions: 2007 RTP Model v. Draft 2011 RTP Model

Because SB 375 indicates that baseline data should be compiled using the model from the MPO's most recent regional transportation plan (RTP), staff completed some preliminary modeling work using the model from our 2007 RTP as the baseline. However, it was determined that the model from our draft 2011 RTP should be used for the purposes of baseline emissions development and target-setting processes.

3. Models, Model Improvements and Quantifying GHG Reductions

KCAG utilized our 4-step model to attempt to quantify any greenhouse gas emission reductions associated with local smart growth strategies. Dowling Associates worked to improve the 4-step model's ability to account for mode choice, transit-oriented development, mixed-use development in urban cores, vanpooling, and infill development ("the 4 Ds"). With this, KCAG hoped to be able to better understand how these smart growth strategies would impact our region.

Additionally, KCAG wants to impress upon all interested parties that there may be a variance in greenhouse gas emission reduction numbers associated with utilizing different assumptions for interregional (IX-XI) trips, updated modeling tools and different post-processors. California is at the forefront of this process, and, as we progress with implementation, existing data and studies will be replaced by more robust and comprehensive evaluations of land use planning and its impact on greenhouse gas emissions.

KCAG expects this to happen moving forward and hopes all interested groups understand that incorporating improved information and tools into future assessments may change the percent per capita reduction numbers, even if the smart growth land use policies remain a constant. The numbers presented in this document may change as more information becomes available, decisions are made regarding how to account for IX-XI trips, and as KCAG's model is improved.

4. Pavley I + LCFS Postprocessor

At this point in time, KCAG's draft proposed reduction targets do not take into account GHG reductions derived from the Pavley I +LCFS Postprocessor.

C. Target Setting and the Blueprint

The San Joaquin Valley Blueprint is a critical land use planning document in Kings County. When staff met with the local planners to evaluate smart growth strategies for the purposes of target-setting, the Kings County Locally-Preferred Blueprint Scenario was revisited to ensure that smart growth strategies were in keeping with the tenets of the Blueprint. The draft targets

proposed in the document have been designed with the Blueprint in mind and are reflective of the Blueprint principles.

D. Kings County's Smart Growth Strategies

In meeting with our member agencies, staff observed some trends in smart growth strategies in Kings County. Because bottom up implementation is a critical component of SB 375 moving forward, KCAG wanted to take the opportunity to highlight the strategies being incorporated into our region's smart growth efforts. These are the smart growth policies we see as context-sensitive for our area, which is still largely rural.

Modeling tools are a key component to understanding the ties between smart growth and greenhouse gas emission reductions. It is our hope that ARB evaluates these smart growth strategies so that Kings County planners (and planners in rural areas across the state) can better understand and quantify how these particular smart growth strategies reduce greenhouse gas emissions specifically in rural areas.

1. Infill Development

Infill development was at the crux of local planning efforts. There are undeveloped parcels within city limits that provide opportunities to provide mixed-use development where existing infrastructure is already in place. Infill development is probably the smart-growth strategy that will be used the most in Kings County. We are interested in seeing more information on the role infill development in existing urban centers plays in reducing greenhouse gas emissions.

2. Mixed-Use Development

Kings County has many vibrant downtown areas that are poised for renovation. These downtowns feature many historical brick buildings from the early twentieth century that are evocative of a bygone, "wild west" era of California history. Currently, these downtowns host restaurants, boutiques and professional offices and remain vital components of our communities. Many of the local jurisdictions are considering updating their zoning ordinances to facilitate more mixed-use development in downtown cores.

Mixed-use development would involve converting unused or underused second stories of commercial properties into lofts or apartments. Our scenarios are reflective of this increase in mixed-use development of this nature in our downtown cores. The revitalization of downtowns is a smart growth strategy being looked at across the board. The City of Hanford, for example, recently completed a Downtown East Hanford Planning Study which focuses on revitalizing part of its downtown into a walkable, sustainable mixed-use hub. In addition to our cities, the focus on downtowns is featured in Kings County's unincorporated communities as well. The Kings County 2035 General Plan provides an outline for focusing rural growth in the existing urban cores of unincorporated communities.

3. Transit-Oriented Development

Another component of our scenario is an increase in transit-oriented development. With the exception of the City of Corcoran, who operates their own dial-a-ride service, Kings Area Rural Transit provides transit service for the entire county and its cities. Several jurisdictions are looking at developing assisted living senior facilities and multifamily complexes near existing commercial centers and transit routes (including near existing transit stops and train depots).

As studies show that California's average age increases every year, the co-benefits of such planning strategies are evident. It is critical to plan for the elderly in a way that facilitates and improves public health, public safety, and access to different modes of transportation. Additionally, the City of Lemoore has planned rail stops in its general plan along the San Joaquin Valley Railroad in anticipation of potential light rail feeder service for the California High Speed Rail System.

4. Vanpooling

Kings County has an extremely successful vanpooling program that is currently operated throughout the region by the Kings County Area Public Transit Agency (KCAPTA). The vanpool program extends far beyond Kings County and the San Joaquin Valley into the counties of Monterey, Sacramento, San Luis Obispo, Santa Barbara, and Ventura. There is an effort underway to form a joint powers agreement (JPA) between some of these counties and form an agency separate from KCAPTA called CalVANS.

The JPA aside, the vanpooling program is immensely successful in Kings County and remains one of the most successful smart growth strategies in reducing vehicle miles traveled and vehicle emissions that is available to Kings County. Staff worked with the agency to outline projections of future vanpooling numbers. Equipment was recently added to each vanpool vehicle that reports a considerable amount of information regarding vanpool commuter trips and vehicle miles travelled (VMT). Staff will be meeting with the agency to obtain this information and intends to incorporate real-time vanpooling data into our future assumptions.

E. The Road to Sustainability

KCAG and its member agencies are committed to promoting and facilitating smart growth in a way that is contextually appropriate for the region. These draft proposed targets are reflective of the Kings County Locally-Preferred Blueprint Scenario and were derived from the bottom up with the participation of our member agencies.

The target-setting process has raised many questions. Moving forward, there are many questions that we would like to see answered regarding the

development of tools to better quantify GHG reductions associated with the smart growth strategies outlined in this document.

KCAG understands that this document is a step in a lengthy initial process. We also understand that, as models improve and more information is available, we may be able to more accurately capture the relationship between land use policy and GHG. We acknowledge that this initial submittal is a “work-in-progress” or living document in that respect. The information presented in this document can be viewed as a snapshot that reflects results derived from assumptions that will change in the future, such as member agency general plans, outputs from a 4-step gravity model and assumptions included in EMFAC 2007. As new information becomes available, new tools are released and models are improved, there will be changes in numbers from this initial submittal.

KCAG’s 2015 Regional Transportation Plan will contain our first Sustainable Communities Strategy. Between now and 2015, we anticipate that, with an improved model and different resources available to us for this purpose, we may be able to better calculate greenhouse gas emissions reductions associated with our smart growth strategies. This will likely give us different numbers than what is presented here. What is presented in this may change as technology improves - even though our smart growth strategies may remain constant.

VII. Draft Proposed Targets

There are three different sets of numbers presented below (Scenarios A, B, and C). The land use assumptions are the same for all of these scenarios. The only way in which they are different is in their calculation of interregional (IX-XI) trips. It was previously mentioned that Dowling Associates studied interregional (IX-XI) trips as they appear in the statewide model. This information was then incorporated into the baseline emissions submittal. Similarly, staff incorporated the statewide model interregional trip data completed by Dowling Associates for the San Joaquin Valley MPOs into the scenario. This information is presented below for illustrative purposes.

It is important to note that Scenario A is what KCAG is submitting as our proposed draft percent per capita reduction target. In contrast, Scenarios B and C are presented to underscore how incorporating difference pieces of data from the statewide model to account for interregional (IX-XI) trips produces different results. All of the other inputs remained constant as our GHG reduction numbers changed depending on how interregional (IX-XI) trips are accounted for.

At this point, it is unknown if any of the methodologies below are “better” than the other. Though Scenario A is reflective of our draft proposed targets, KCAG felt it was important to demonstrate how the reduction numbers change depending on how interregional (IX-XI) travel is calculated.

In keeping with the “Big 4,” KCAG excluded through trips (XX trips) when running all three scenarios. For Scenarios A, B, and C, the assumptions regarding through trips (XX trips) were derived from KCAG’s model. Additionally, KCAG understood that BDN outputs from EMFAC and not BUR outputs were to be used for the purposes of

establishing reduction numbers, of which the numbers below are reflective. Below is a quick summary of the through (XX) trip and interregional (IX-XI) trip assumptions used in each scenario:

- **Scenario A:** removes all through trips (XX) as calculated by KCAG’s model and includes all interregional (IX-XI) trips as they are calculated using KCAG’s travel demand model.
- **Scenario B:** removes all through trips (XX) as calculated by KCAG’s model and includes 50% of interregional trips (IX-XI) that start/end in Kings County and travel *only within the San Joaquin Valley*.
- **Scenario C:** removes all through trips (XX) as calculated by KCAG’s model and includes 50% of interregional trips (IX-XI) that start/end in Kings County and travel *throughout the state*.

KCAG Draft Percent Per Capita Greenhouse Gas Emissions Reductions Summary Table	KCAG Proposed Target: Scenario A	Informational: Scenario B	Informational: Scenario C
	XX Trips Excluded, IX-XI Trips from KCAG Model Included	Addition of 50% of VMT IXXI (outside MPO SJV only)	Addition of 50% of VMT IXXI (outside MPO all trips Statewide links)
Percent Per Capita Reduction in CO2 Emissions from 2005			
Base Year (2005)			
SB 375 Interim Year (2020)	-3.5%	-5.0%	-7.3%
SB 375 Horizon Year (2035)	-5.1%	-2.7%	-1.6%

As previously mentioned, it has not been determined if any of the above methodologies for factoring interregional (IX-XI) travel are “more correct” than the others. As illustrated above, how interregional (IX-XI) travel is accounted for has a direct relationship with GHG reduction numbers even as smart growth strategy inputs remained constant. It is important to understand the complexity of this issue and the totality of its implications moving forward. MPOs will need guidance on how to account for this in the future. It is important to consider all of these factors moving forward as we begin to develop our first Sustainable Communities Strategies.

VIII. Next Steps

KCAG greatly appreciates the opportunity we have been given to provide details about Kings County and its role in the statewide framework. We take great pride in our communities and hope this document has provided some additional details as to what makes us unique. As we move forward in the target-setting process, we look forward to the continued opportunity to work with the Air Resources Board and speak on behalf of our member jurisdictions.

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Appendix A

Detailed EMFAC 2007 Results Table by Scenario

KCAG Draft Percent Per Capita Greenhouse Gas Emissions Reductions Summary Table	KCAG Proposed Target: Scenario A	Informational: Scenario B	Informational: Scenario C
	XX Trips Excluded, IX-XI Trips from KCAG Model Included	Addition of 50% of VMT IXXI (outside MPO SJV only)	Addition of 50% of VMT IXXI (outside MPO all trips Statewide links)
Scenario and Year	Population		
Base Year (2005)	145463	145463	145463
SB 375 Interim Year (2020)	205749	205749	205749
SB 375 Horizon Year (2035)	275121	275121	275121
Weekday CO2 Emissions --EMFAC2007 BDN (Tons per day)			
Base Year (2005)	920	647	803
SB 375 Interim Year (2020)	1256	870	1053
Sb 375 Horizon Year (2035)	1651	1191	1495
Weekday CO2 Emissions Per Capita --EMFAC2007 BDN (Pounds per day)			
Base Year (2005)	12.64	8.90	11.04
SB 375 Interim Year (2020)	12.20	8.46	10.24
Sb 375 Horizon Year (2035)	12.00	8.66	10.86
Percent Per Capita Reduction in CO2 Emissions from 2005			
Base Year (2005)			
SB 375 Interim Year (2020)	-3.5%	-5.0%	-7.3%
SB 375 Horizon Year (2035)	-5.1%	-2.7%	-1.6%

CO2 outputs from LDA, LDT1, LDT2 & MDV

Appendix B

Dowling Associates Statewide Model Interregional
(IXXI) Trips Memo
As of 5/20/10



Date: May 7, 2010

Memorandum

To: Cari Anderson, CAC
cc: Mike Bitner, Fresno COG
From: Kym Sterner
Reference: San Joaquin Valley SB 375 Target Setting Assistance P08086.04
Subject: Application of the Statewide Model for Interregional Travel

Dowling Associates applied a version of the California Statewide Model to estimate the VMT associated with interregional travel (IXXI) to and from each of the 8 MPOs within the San Joaquin Valley (SJV) region. This memorandum briefly summarizes the assumptions and process and recommends improvements to the Statewide Modeling element of the interregional trip evaluation (does not affect MPO modeling).

Objective

The MPO models in the SJV region do not track trips beyond the extents of model borders, which is usually their MPO boundary. In addition, even though through trips (XX trips) are forecast in the MPO models, VMT associated with these trips are not included in the SB375 forecasts. Therefore, if only the MPO models are employed for the forecasting of interregional trips, the VMT associated with the full length of trips between non-adjacent counties is unaccounted for. For example, trips between Fresno and Bakersfield are only accounted for within the Fresno COG MPO model boundary and the Kern COG MPO model boundary. The length of the trip through Kings or Tulare Counties isn't considered. Another tool is required to estimate the VMT for travel between these counties. Discussions between the MPOs led to the decision to use the California Statewide Model (STM) for the purpose of fully tracking trips within and to/from the SJV region.

Land Use Assumptions in the Statewide Travel Demand Model

Within the San Joaquin Valley Region

Each of the 8 MPOs provided land use by traffic analysis zone in their local travel demand model format for a base year (usually 2005), 2020, and 2035. Using a process consistent with that used for the BluePrint Study, Dowling Associates aggregated the land use into the statewide model household and employment categories (total households, retail, service, and other employment) by statewide model traffic analysis zone.

Outside the San Joaquin Valley Region

For counties outside of the SJV region, original statewide model land use inputs were interpolated/extrapolated using 2007 Department of Finance (DOF) forecasts. For simplicity, it was assumed that the population and employment ratio would remain consistent.

Recommended Potential Improvements to the Statewide Model Land Use Assumptions

Obtain land use data from MPOs outside of the SJV.

Network Assumptions in the Statewide Travel Demand Model

Given the short time frame required for estimation of interregional travel, the network assumptions are consistent with the original statewide model assumptions. The year 2000 network was used for 2005 forecasts and the future financially constrained network was used for 2020 and 2035.

Recommended Potential Improvements to the Statewide Model Network Assumptions

Incorporate individual MPO RTP network assumptions into the Statewide Model.

Statewide Travel Demand Model Validation

The version of the statewide model used for this task includes the estimation of county to county work flows based on the 2000 Census Journey to Work data. However, several of the MPOs voiced concerns over the validation of the statewide model to base year counts. It was agreed, given the quick turn-around time required for this task, that review and validation of the statewide model was not possible within the available time-frame.

That said, even though each of the MPO models have been validated at their county cordons to base year counts, most (all?) adjacent MPOs in the SJV region have not necessarily agreed upon or validated county crossing to consistent future year forecasts. Therefore, it is expected that, depending upon the process used to develop county line forecast volumes (usually an input into the MPO models), adjacent MPOs would have very different forecasts at their shared county borders for 2020 and 2035. It could be argued that use of the statewide model at least ensures consistent assumptions at the MPO cordons.

Recommended Potential Improvements to Statewide Model Validation

Have adjacent MPOs agree on county cordon volumes for 2005, 2020 and 2035 and validate statewide model to these forecasts. Review county to county flows and determine if reasonable.

Daily Vehicle Trip Assignments by County in the Statewide Model

Dowling Associates developed scripts to track trips to/from each of the 8 MPOs within the SJV region. Trips were tracked that have an origin or a destination within each of the MPOs, as well as whether the other end originates or is destined for another MPO within or outside of the SJV region. VMT from interregional travel to/from each MPO was calculated on a link basis within each MPO as well as for the rest of the state (MTC, SACOG, SCAG, SanDAG, and remaining).

Recommended Potential Improvements to Statewide Modeling

Determine exclusions for non MPO trips within an MPO (e.g., tribal and federal lands) by TAZ.

Calculation of Interregional VMT using the Statewide Travel Demand Model

Within the Individual SJV MPOs

It was agreed that the individual MPO travel demand models are the best source for *intra* MPO travel as well as the portion of interregional travel that occurs on links within each MPO. Therefore, the methodology developed and applied for the MPO models should stand.

Outside Individual SJV MPOs

Even with the known limitations of this version of the Statewide Travel Demand Model it was also agreed that the statewide model would be the best available tool to estimate the ***additional VMT associated with interregional travel (IXXI) that is not accounted for in the individual MPO travel models.*** By definition, this IXXI travel would be XX travel through some counties and would not be attributed on either end to those counties.

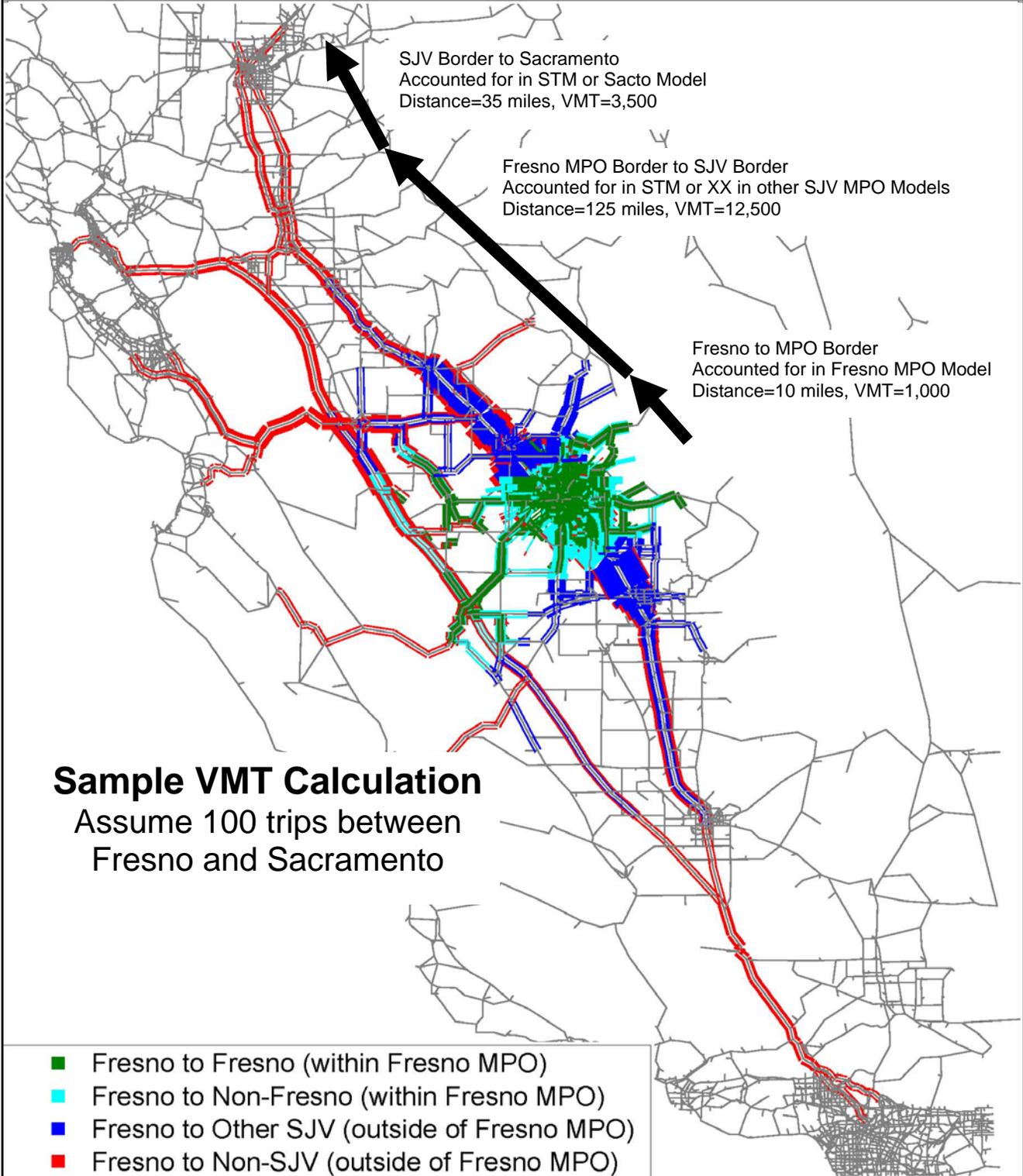
The VMT related to interregional travel (IXXI) on links outside of the MPO have been estimated using three different methodologies:

1. **Total VMT** - VMT associated with travel *to/from* SJV region (trips where either the origin or the destination are within SJV) **on all statewide links**, outside of the origin MPO and the destination MPO.
2. **VMT on SJV Links** – VMT associated with travel *to/from* SJV region (trips where either the origin or the destination are within SJV) **on SJV links**, outside of the origin MPO and the destination MPO.
3. **SJV Only VMT** - VMT associated with travel *within* SJV region (trips where both the origin and the destination are within SJV) **on SJV links**, outside of the origin MPO and the destination MPO.

In order to clarify, below is a sample calculation of VMT for an assumed 100 trips traveling from a Fresno origin to a Sacramento destination. The same example is shown graphically on the next page. As can be seen below, for long distance trips to and from the SJV region, most of the VMT is associated with portion of the trips outside the coverage of the individual MPO models.

Sample VMT Calculations for Interregional Trips (IXXI) SJV Origin to Non SJV Destination				
Fresno-Sacramento	Distance for trip portion (miles)	VMT Estimates		
		All Trips All Links	All Trips SJV Links	SJV Trips SJV Links
Within Fresno MPO	10	1,000	1,000	1,000
Other SJV	125	12,500	12,500	0
Non SJV	35	3,500	0	0
Totals	170	17,000	13,500	1,000
% of Total		100%	79%	6%

San Joaquin Valley Interregional Travel
 SB 375 Target Setting
 Fresno Travel in 2020



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