PUBLIC MEETING SUMMARY

FOR
CRABB RIVER ROAD (FM 2759/762)
FROM US 59 TO 500 FEET SOUTH
OF THE LCISD COMPLEX
IN
FORT BEND COUNTY, TEXAS

CSJ:1415-03-010 & 0543-03-067

Texas Department of Transportation

PUBLIC MEETING SUMMARY

FOR: Crabb River Road (FM 2759/762)
FROM: US 59
TO: 500 feet south of LCISD complex
COUNTY: Fort Bend

Fort Bend County and the Texas Department of Transportation conducted a Public Meeting concerning the proposed Crabb River Road (FM 2759/762) roadway expansion from US 59 to 500 feet south of the Lamar Consolidated Independent School District Complex in Fort Bend County, Texas. The meeting was held on December 10, 2009 in the Big Tent at River Pointe Community Church located at 5000 Ransom Road, Richmond, TX 77469. The proposed project consists of widening the existing roadway from an open ditch two-lane undivided facility to a four-lane curb and gutter divided facility with underground storm sewer drainage. The total length of the project is approximately 3.8 miles. Additional right-of-way (ROW) would be needed for the proposed project. The additional ROW would be acquired from either the east or west side of the roadway, or a combination of both.

The Notice of Public Meeting was published on November 11th in the Houston Chronicle and El Dia; on November 12th in Fort Bend & Sugar Land Sun (English and Spanish); and on November 18th in Las Noticias de Fort Bend, a Spanish language paper. The notices and affidavits of insertion are attached in Appendix A.

The public meeting was held from 6 PM to approximately 8 PM in an open house format to give citizens the opportunity to view the various exhibits that were on display at the meeting and to discuss and ask questions concerning the proposed project with project staff members. The exhibits consisted of 1) the project purpose and need, 2) schematics and typical cross sections for the proposed project, 3) an environmental constraints map, 4) safety information for the corridor, and 5) Right-of-Way (ROW) information. Input gathered from meeting attendees will be considered and evaluated in the final design for the proposed project. Approximately 98 members of the general public attended the meeting as well as two elected officials.

A registration table was located at the entrance to the Big Tent where the meeting was conducted. The registration table provided sign-in sheets for attendees to register, Public Meeting Comment Forms (in English and Spanish) for attendees to share their thoughts, and Public Meeting Handouts (in English and Spanish), which contained a brief description and purpose of the proposed project. A ROW information table was located near the exit to address any questions concerning property acquisition.

Public Comments

At the open house, the general public was invited to ask questions and comment on the proposed project. All verbal questions and comments were immediately responded to at the meeting. Sixteen Public Meeting Comment Forms were submitted at the public meeting, three comments were received via email by the deadline of December 28,

2009 and 38 Public Meeting Comment Forms were received via regular mail, postmarked by the deadline of December 28, 2009. Numerous forms contained multiple comments. A brief summary of the questions/comments received and responses are summarized as follows:

Comment 1: The raised median between Hwy 59 and Sansbury would significantly impact access to our business. We suggest an at-grade median that would accommodate turns.

Response: A raised median would improve safety along the corridor. By reducing mid-block left turns, and creating left turn lanes at median cuts, traffic would flow more smoothly and vehicle/vehicle accidents would be greatly reduced. Business access would be maintained throughout the corridor.

Comment 2: Looks great!! Sooner the better.

Response: Noted

Comment 3: Much better than previous design. My compliments. This, we can support.

Response: Noted

Comment 4: I am concerned about northbound merge lane entering from Sansbury during the A.M. rush hour (also may be an issue on southbound exit to Sansbury) causing traffic to back up.

Response: As the design progresses into the final design stage, a traffic study would determine any exclusive lanes required to accommodate turning vehicles.

Comment 5: Thank you for having informed and courteous representatives from TxDOT at the 12/10 public meeting.

Response: Noted

Comment 6: Please minimize impact to mature trees within ROW

Response: Only small amounts of right-of-way would need to be acquired for this project. It is not anticipated that any mature trees would be impacted by the construction activities.

Comment 7: I am concerned about traffic merging at Sansbury and Crabb River Road during morning and evening rush hours.

Response: As the design progresses into the final design stage, a traffic study would determine any exclusive lanes required to accommodate turning vehicles.

Comment 8: I prefer this to an extension of Grand Parkway

Response: Noted

Comment 9: I own the Exxon/Burger King at Crabb River Road and Hwy 59. We need a median cut in front of our business on Crabb River. Current proposed drawings do not show any median cuts. It will be devastating to our business if there are no cuts.

Response: During the final design phase of this project, median openings would be determined on a case by case basis.

Comment 10: Great plan. Finally, an idea that makes sense. Please press forward with speed. Congestion on Crabb River Road must be addressed immediately.

Response: Noted

Comment 11: I am concerned about residents being able to safely exit Bridlewood Drive and Berdett. Signal lights might be required.

Response: A signal warrant study would be prepared to determine location of traffic signals for the project.

Comment 12: The Crabb River median should be at level so individuals can make a turn into the businesses located on Crabb River Road.

Response: A raised median would improve safety along the corridor. By reducing mid-block left turns, and creating left turn lanes at median cuts, traffic would flow more smoothly and vehicle/vehicle accidents would be greatly reduced. Business access would be maintained throughout the corridor.

Comment 13: To begin, I regret voting for Mr. Morrison in the past election. It is clear that this proposal supports his personal agenda of postponing the construction of 99. My property is positioned closer to the road than any other home in the Stone River subdivision. As explained to me in this meeting, I can expect to have a road approximately 4' – 6' from my fence and no plans currently exist to build any type of privacy fence. This is a definite safety concern for my family simply because of the additional traffic and the proximity to my home. Furthermore, I intend to begin investigating my rights as a homeowner, including how close a major road can be to my property. It would be great if you actually had some information available on the TxDOT website for the public about this as you did for Grand Parkway.

Response: This proposed project is not intended as a replacement for Grand Parkway, but as a much-needed safety and roadway improvement for the residents and businesses along Crabb River Road. While it is true that there are currently no plans to construct privacy walls, there is a noise study being conducted. Depending on the results of this study, TxDOT will recommend whether or not noise walls should be

constructed. For additional information on this proposed project, please visit the Fort Bend County website at http://www.co.fort-bend.tx.us/getSitePage.asp?sitePage=29844 where you can find copies of letters of support and additional information.

Comment 14: I'd like to request a median opening at approximately station 157. I have a property with a driveway on the east side of Crabb River Road. We are building a day care at this location and a medical plaza will follow. We need access to the property coming from US 59. The business park at station 158 will also be affected if a median opening is not put in. The majority of our business will come from Greatwood and Canyon Gate. Our future patrons need access to our driveway. Thank you for your consideration.

Response: The schematics presented at the public meeting are not in their final format. The final decision on where to place median cuts and left turn lanes would occur during final design and would depend on a number of contributing factors including business traffic, safety, and sight lines.

Comment 15: The Crabb River Road expansion should not have a raised median because it will severely impact business and land values due to loss of turning in ability in both directions. The median should be at grade level with the street to accommodate turns.

Response: A raised median would improve safety along the corridor. By reducing mid-block left turns, and creating left turn lanes at median cuts, traffic would flow more smoothly and vehicle/vehicle accidents would be greatly reduced. Business access would be maintained throughout the corridor.

Comment 16: With no median turn arounds, it makes it inconvenient for our customers to access private businesses. Recommend flat medians in order for business turnarounds.

Response: A raised median would improve safety along the corridor. By reducing mid-block left turns, and creating left turn lanes at median cuts, traffic would flow more smoothly and vehicle/vehicle accidents would be greatly reduced. Business access would be maintained throughout the corridor.

Comment 17: I live at the corner of Crabb River and 762. The proposed road will be about 15 feet from my back door. This is unacceptable. I am sorry I cast my vote for Morrison. The only way I would quietly go away would be a buy-out. The overpass and frontage road are too close for safety purposes to the homes on that end of the road.

Response: Noted

Comment 18: It [the public meeting] was very informative to our concerns.

Response: Noted

Comment 19: I am a homeowner who voted for Morrison. The letter I received in the mail stated that various proposals would be offered tonight. There is only one proposal. I feel duped.

The answer is not to widen existing roads but to offer more (Thompson should go through to Sugarland or Arcola). The elevation of this proposal would exceed any hoped for sound barrier and would be at its most insidious directly behind my home creating more pollution, noise & less privacy. I am strongly opposed to this proposal and would welcome a genuine discussion.

Response: Noted

Comment 20: This plan should include a noise barrier – lack of privacy and pollution. Instead of an overpass, what would an underpass represent? Or maybe even a raised roadway along the drain ponds built in the subdivision further down Thompson Highway.

Response: An underpass would be prohibitively expensive and impossible to do safely given the presence of the railroad line and the gas stations in the area. Noise studies are still being conducted and a recommendation on whether or not to build noise walls will be forthcoming.

Comment 21: I believe the best way to move more traffic would be to make Crabb River Road 3 lanes of the traffic each way (6 lanes total) with a center turn lane or divided. A raised divided lane will restrict entrances to businesses along Crabb River Road.

Response: A six lane facility for Crabb River Road would require additional ROW that would have a major impact on existing businesses and homes adjacent to the proposed roadway. A raised median along this facility would increase traffic safety for turning vehicles, throughput capacity and reduce delays.

Comment 22: Is there a plan to build an overpass at the BNSF railroad?

Response: The proposed project would provide grade separation overpass between the roadway and Burlington Northern Santa Fe Railroad line which runs parallel to Thompsons Highway.

Comment 23: Is there a plan to create a new entry for Royal Lake Estates at FM 762 near the new high school complex? I am an RLE resident and Commissioner Morrison said he would discuss this at the meeting.

Response: The schematics presented at the public meeting are not in their final format. The final decision on where to place median cuts and left turn lanes would occur during final design, after environmental approvals are received, and would depend on a

number of contributing factors including business traffic, safety, and sight lines.

Comment 24: Is there anyway to view the plans online?

Response: Not at this time. The design schematics for the proposed improvements will be available for inspection at the Fort Bend County Engineer's Office, 1124-52 Blume Road, Rosenberg, Texas 77471, and the TxDOT Houston District Fort Bend Area Office, 4235 SH 36, Rosenberg, Texas 77471.

Comment 25: I fully support the proposed widening of Crabb River Road in Fort Bend County Precinct 1. I am a resident of the Greatwood subdivision and with children getting ready to attend Lamar Consolidated Independent School District's side for a new junior high and high school complex at George Ranch. I welcome the state's effort to accommodate the thousands of more vehicles carrying students, parents and school staff that will be on the road with the planned opening of the schools next year. I am very concerned about the road crossing the railroad tracks as it does currently, especially with teenage drivers having to contend with negotiating the tracks with trains coming all throughout the day. My fear is that there will be a lot of kids trying to beat on-coming trains in order to be on time for school eager to get home after school, etc. I hope that part of the expansion is taken care of first. The sooner the widening of the road starts, the better!

Response: Noted

Seven residents submitted the following comments:

Comment 26: The purpose of this letter is to request a median break at station 157 of the expansion project. A break in the median will enable me to safely turn into a private school being built on Crabb River Road. This break would allow south bound drivers on C.R. Road uninterrupted access to a private school and other businesses. As a resident of Canyon Gate, in order to arrive at the school, I would have to make a U-turn at Tara Drive, causing traffic delays and creating a dangerous situation. Thank you for seriously considering this petition.

Response: During the final design phase of this project, median openings other than at street intersections would be considered on a case by case basis.

Comment 27: Dear Sirs: My wife and I, along with 3 other couples, have invested our life savings in building a private school on Crabb River Road (east side) at approx. sect. station 157. We would like to request an interrupted median access to our facility. We are scheduled to open late Spring 2010. Our future patrons will need uninterrupted access to our driveway when southbound on FM 2759. A median break is crucial, for without it, our business will be adversely affected, compromising our investment and the future well-being of our family. Also, without this median break, our customers would have to travel to the next light at Tara Drive and make a U-turn, causing traffic jam, delays, and hazardous situations. Thank you in advance for your consideration and

hopefully our request is granted. This is a very important factor that will ensure we have a successful school.

Response: During the final design phase of this project, median openings other than at street intersections would be determined on a case by case basis.

Comment 28: Dear Sirs: I would kindly like to request an interrupted median in front of my property located on the east side of Crabb River Road at approximately sect. 157, between Greatwood Knoll and Tara Drive. My close ones have invested a lot of hard work and money into the new business being developed on that road. By making it easier to access this property, future patrons can arrive safely at our business. This will also enable our business to succeed and have a positive impact on the community. Thank you for taking this petition into serious consideration.

Response: During the final design phase of this project, median openings other than at street intersections would be determined on a case by case basis.

Comment 29: Dear Sirs: I would kindly like to request an interrupted in front of my property located on the east side of Crabb River Road at approximately sect. 157, between Greatwood Knoll and Tara Drive. I am building a private school and the residents from Greatwood, Canyon Gate, and beyond 59 need to have uninterrupted access when turning left (southbound) into my school. Thank you in advance for considering this important aspect of my business when building the road.

Response: During the final design phase of this project, median openings other than at street intersections would be determined on a case by case basis.

Comment 30: Build turn lanes at approximately 244 marker at entrance to St. Mark's Episcopal Church and Allied Concrete office

Response: During the final design phase of this project, median openings other than at street intersections wouldl be determined on a case by case basis.

Comment 31: Extend existing driveway to meet new road that is approx. 250' south of main entrance to St. Mark's Episcopal Church

Response: Existing driveways would be extended from the existing ROW line to connect to the proposed row.

Comment 32: We attended the public meeting on the 10th of December and found the information to be very informative. The individuals working at the event were attentive and answered our questions. The County Commissioner Richard Morrison is to be commended for his efforts to provide our communities with the expansion needed with as little intrusion environmentally as possible. The overpass over the railroad tracks is a must for our school children. This plan is a lot more sensible than the Segment C Toll Road previously offered. We attended all of the Grand Parkway Association meetings

and found the TxDOT folks and associates at the Dec. 10th meeting to be a lot more friendly and willing to listen to suggestion. The GP Association representatives were unfriendly and were uncompromising in their positions on a project few in our community supported. Thanks again for this meeting. I am a writer for the Greatwood News as well as a member of the editorial committee, and we are doing very favorable articles for this expansion.

Response: Noted

Comment 33: Commissioner Morrison deserves a lot of credit for this very much improved plan for Crabb River Road and 762. I would like to make a recommendation that you install signs prohibiting trucks for using the turn-around at 59 & Crabb River Road/99. The curbs, dirt, and guideposts are being damaged by these vehicles that are using the turn-arounds.

Response: Noted

Comment 34: No left turn lanes going southbound off 59 and forcing a U-turn at Sansbury is impractical.

Response: The schematics presented at the public meeting are not in their final format. The final decision on where to place median cuts and left turn lanes would occur during final design and would depend on a number of contributing factors including business traffic, safety, and sight lines.

Comment 35: If Grand Parkway is a reality, do leg from 59 to Sansbury as planned by Grand Parkway so as not to need to tear up and redo again

Response: The Crabb River Road project is a separate project from the proposed Grand Parkway; however, this facility would be compatible with the future Grand Parkway improvements.

Comment 36: More than one entry/exit point from the new Junior/Senior high school otherwise come 3:00 PM every school day will be a mess!

Response: As the design of the project advances into the final stage, coordination with school officials would take place to determine the needs for exclusive turning lanes as well as openings to accommodate buses and vehicular traffic.

23 residents submitted the following comment:

Comment 37: The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 157 between Greatwood Knoll and Tara Drive signal lights. On the east side of FM 2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written is being developed into a

private school and a medical facility. These developments are going to be adversely affected by the lack of this turn break.

Community residents from Greatwood, Canyon Gate, River Park and the general traffic heading southbound to these businesses will now find themselves stuck at the Tara traffic light to make a U-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay, and a traffic line at the signal light for the above intersections, but for the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow U-turn.

We urge you to consider a full break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn to the left going southbound on this road.

As a community resident, tax payer and daily user of this road, I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.

Response: During the final design phase of this project, median openings other than at street intersections would be determined on a case by case basis.

Comment 38: The Sierra Club supports portions of this proposal including the underpass at Sansbury Blvd.; an overpass at the intersection of FM 2759/FM 762 and the existing railroad track; landscaping and tree planting; and a hike/bike trail that will access adjacent or nearby neighborhoods. Some portions of this proposal address local needs and fit in well with that the local community wants. This is good.

Response: Noted

Comment 39: The Sierra Club understands that funding may also be sought for alternative energy installations (wind or solar) that would be constructed near this road to provide power for traffic lights and other safety features. If wind energy power is sought then studies must be conducted to ensure that any potential bird mortality due to strikes against windmills will be mitigated to acceptable levels as determined by Texas Parks and Wildlife Department and U.S. Fish and Wildlife Service.

Response: Noted

Comment 40: The Sierra Club supports the placement of noise barriers on the overpass across the railroad tracks that cross FM 762. The Sierra Club recently drove the potential route of the proposed road expansion and saw that several church related complexes either have been built or will soon be built near this overpass. The people and children that visit, go to school work, and worship at these institutions should be protected from the negative impacts of noise due to the increase in traffic that will be created by the construction of the road expansion and the completion of the nearby school complex.

Response: Noted

Comment 41: The Sierra Club does not want to simply plan for our children to be "on the edge of their safety zone" with regard to air pollution. We want to make sure there is a margin of safety so our children are safe and healthy. The Lamar Consolidated Independent School District school complex is only a few hundred feet from the proposed road expansion. Children, teachers, administrators, parents, and all people need to be protected from air and noise pollution that comes from nearby roads. Various studies have indicated that people living near roads (within about 1,000 feet) have greater health risks due to their exposure to greater levels of air pollution. Children have an even greater risk due to air pollution because their bodies are growing and developing. Some of these studies and the distances from roads that may be dangerous to people's health or cause an increase in exposure and risk that are documented in these studies are:

1) 750 feet (250 yards), "Distance-weighted traffic density in proximity to a home is a risk factor for leukemia and other childhood cancers," by Watchell Pearson, Robert L. Pearson, and Kristie Ebie, Journal of Air and Waste Management Association 50: 175-180,2000.
2) 660 feet (220 yards), "Childhood Asthma Hospitalization and Residential Exposure to State Route Traffic," by Shao Lin, et. al., Environmental Research Section A, Volume 88, pp. 73-81, 2002.
3) 990 feet (330 yards), "Concentration and size distribution of ultra-fine particles near a major highway," by Yifang Zhu, et. al., Journal of the Air and Waste Management Association, September 2002, and "Study of ultra-fine particles near a major highway with heavy-duty diesel traffic," Atmospheric Environment 36(2002), 4323-4355.
4) 270 feet (90 yards), "Living Near a Main Road and the Risk of Wheezing Illness in Children," by Venn, et. al., American Journal of Respiratory and Critical Care Medicine, Volume 164, pp. 2177-2180, 2001.
5) 15,849 feet (3 miles), "Hazard proximities of childhood cancers in Great Britain from 1953-1980," by Knox and Gilman, Journal of Epidemiology and Community Health, 51:151-159, 1997.
6) 300 feet (100 yards), "Traffic, Air Pollution, and Mortality Rate Advancement Periods," by M. Finkelstein, M. Jerrett, and M. Sears, American Journal of Epidemiology, Volume 160, pp. 173-177, 2004.
7) 400 feet (150 meters), "Air Pollutant Concentrations Near Texas Roadways," by David Allen, et. al., Texas Commission on Environmental Quality, Draft Final Report, Service Order 18, Contract No. 852-4-56385, August 31, 2007.
8) 225 feet (75 meters), "Traffic, Susceptibility, and Childhood Asthma," by Rob McConnell, et. al., Environmental Health Perspectives, Volume 114, Number 5, May 2006.
9) 1,640 feet (500 meters), "Effects of exposure to traffic on lung development from 10 to 18 years of age: a cohort study," Gauderman, et. al., www.thelancet.com, Volume 368, January 26, 2007.

In addition, the study “Association Between Local Traffic-Generated Air Pollution and Preeclampsia and Preterm Delivery in South Coast Air Basin of California,” by Jun Wu, et. al., shows there are increases in preeclampsia (a multi-system disorder in pregnant women characterized by elevated blood pressure, edema, and protein in the urine) and preterm delivery near roadways in California.

Other documents that deal with air pollution effects on people near roadways include:

1) Particulate Matter and Air Toxic Pollutant Exposures Near Heavily Traveled Roadways in the U.S., by Patricia Rowley and Richard Cook, U.S. EPA.
2) Bibliography of Near Roadway Health Effects (I) and Exposure Studies (II), U.S. EPA, March 2007.
3) Highway Health Hazards, Sierra Club, 2004.
4) Freeways & Health: Recent Studies, Dr. Winifred J. Hamilton, June 4, 2002.
5) Diesel and Health in America: The Lingering Threat, Clean Air Task Force, February 2005.
6) Health Assessment Document for Diesel Engine Exhaust, U.S. EPA, May 2002.
7) Health Effects of Air Pollution: Beyond the Criteria Pollutants, Dr. Philip Bromberg, et. al., Air Toxics Workshop II, Section 1, Mickey Leland Center, June 12, 2007.
8) Near-Roadway Exposure and Health, Chad Bailey, U.S. EPA, Office of Transportation and Air Quality, Air Toxics Workshop II, Mickey Leland Center, June 12, 2007.
9) Air Pollutant Concentrations Near Texas Roadways, David Allen, et. al., Draft Final Report, Texas Commission on Environmental Quality, August 31, 2007.

These studies and others should be used in determining potential environmental impacts due to the proposed expansion of 3.8 miles of Crabb River Road (FM 2759/FM 762), from a two-lane to a four-lane road, from U.S. 59 South to 500 feet past the Lamar Consolidated Independent School District school complex in Fort Bend County. In addition, these studies should be used to develop mitigation measures to reduce any potential air pollution health impacts that may occur to humans due to the implementation of this proposal. The U.S. Environmental Protection Agency has done and continues to conduct research on this issue and should be contacted for assistance.

The Sierra Club has already provided most of these studies to Commissioner Morrison recently and to the TxDOT during the comment periods for the environmental impact statements for the proposed Grand Parkway, Segment E and Trans-Texas Corridor/Interstate 69 projects. If TxDOT would like to receive additional copies of these studies again please contact me and I will make hard copies and provide them to TxDOT.

Response: Noted

Comment 42: The Sierra Club is enclosing with this letter the studies "Traffic, Air Pollution, and Mortality Rate Advancement Periods," by M. Finkelstein, M. Jerrett, and M. Sears, American Journal of Epidemiology, Volume 160, pp. 173-177, 2004 and "Effects of exposure to traffic on lung development from 10 to 18 years of age: a cohort study," Gauderman, et. al., www.thelancet.com, Volume 368, January 26, 2007, which provide additional information about the potentially harmful air pollution impacts of roads.

Response: Noted

Comment 43: Some studies suggest that air pollution interacts with noise pollution to cause additive environmental impacts on human health/welfare. Other pollution hazards that are of concern include in-vehicle levels of air pollution which drivers and passengers breathe; vehicle in motion concentrations of air pollutants that are emitted during actual driving conditions/routes; and actual noise levels at major roads out at least 1,000 feet.

The Sierra Club strongly recommends that TxDOT and Fort Bend County protect children and other people that work and visit the Lamar Consolidated Independent School District school complex on FM 762 from air and noise pollution by requiring mitigation measures. The Sierra Club particularly recommends that a noise wall and series of off-set tree plantings (3-5 rows) be constructed and implemented near the boundary of the school property and the expanded FM 762 to reduce both noise and air pollution.

Trees and shrubs used for the green living noise and air pollution barrier should be a mixture of local Colombia Bottomland species found in the Brazos River Floodplain. Species should be used that grow to different heights (understory, midstory, and overstory trees) to ensure that air and noise pollution is filtered or attenuated at all height levels. Some acceptable local species of trees or shrubs include Bur Oak, Shumard Oak, Live Oak, Water Oak, Pecan, Sugarberry, Cedar Elm, Green Ash, Red Bud, Rough-Leaf Dogwood, American Elm, Carolina Laurel Cherry, Water Hickory, Bald Cypress, Soapberry, Little Hip Hawthorn, Deciduous Holly, Yaupon Holly, Swamp-Privet, Button-Bush, Box Elder, Black Willow, Honey Locust, and Dwarf Palmetto. This area can also be landscaped attractively with small ponds to provide wildlife habitat as well as serve as a scenic frontispiece for the school complex as well as serve as noise and air pollution mitigation area.

Enclosed is an article entitled "The effects of roadside structures on the transport and dispersion of ultrafine particles from highways," by George E. Bowker, et. al., Atmospheric Environment, article in press, accepted June 27, 2007 which states "Results indicated that air pollutant concentrations near the road were generally higher in open terrain situations with no barriers present" and documents that noise barriers and trees can reduce air pollution near roads.

Response: *Noted*

Comment 44: Crabb River Road/FM 2759/FM 762 should be the gateway to Brazos Bend State Park. If this is going to occur then plantings of tree and shrub species mentioned above (representative of the Columbia Bottomlands) should be planted to line both sides of the road. Later projects for this area should extend this theme planting all the way to Brazos Bend State Park.

Response: Noted

Appendix A
Affidavits of Publication

AFFIDAVIT OF PUBLICATION

STATE OF TEXAS:

COUNTY OF HARRIS:

Before me, the undersigned authority, a Notary Public in and for the State of Texas, on the day personally appeared: GAIL CHASTUN, who after being duly sworn, says that she is the ACCOUNTS RECEIVABLE LEAD at the HOUSTON CHRONICLE, a daily newspaper published in Harris County, Texas, and that the publication, of which the annexed herein, or attached to, is a true and correct copy, was published to-wit:

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Gail Chastun

GAIL CHASTUN
ACCOUNTS RECEIVABLE LEAD

Sworn and subscribed to before me, this the 11th Day of November A.D. 2009

NOTARY PUBLIC STATE OF TEXAS
PENNY STOW
NOTARY PUBLIC, STATE OF TEXAS
MY COMMISSION EXPIRES
FEB. 4, 2010

Penny Stow

Notary Public in and for the State of Texas

NOTICE OF PUBLIC MEETING
FM 762/FM 2759
(Crabb River Road)
December 10, 2009 -
6:00 PM to 8:00 PM
River Point
Community Church
5000 Ransom Road
Richmond Texas 77469

Fort Bend County and the Texas Department of Transportation (TxDOT) will conduct a public meeting on December 10, 2009 from 6:00 pm to 8:00 pm at River Point Community Church located at 5000 Ransom Road, Richmond Texas 77469 to discuss proposed improvements to FM 762/FM 2759 (Crabb River Road). The meeting will be conducted in an open house format, so individuals may attend any time between 6:00 p.m. and 8:00 p.m. on December 10, 2009.

The proposed improvements would widen the existing FM 762/FM 2759 (Crabb River Road) roadway to a 4-lane divided curb and gutter roadway with underground storm sewer drainage. The project limits begin on FM 2759 (Crabb River Road) at US 59 and extend southward to approximately 500 feet south of the new Lamar Consolidated Independent School District (LCISD) middle school/high school complex located on FM 762, a total distance of approximately 3.8 miles. Various design options will be presented at the meeting for public review and comment. Project team members and representatives from Fort Bend County and TxDOT will be present to discuss the project and address questions. Personnel from the TxDOT Right-of-Way Division will be available to discuss the procedures, benefits, and programs, and will provide other information regarding land acquisition.

All interested citizens are invited to attend this meeting to express their views and discuss the project with members of the project team, Fort Bend County, and TxDOT representatives. The meeting will be held in an accessible location for persons with disabilities. Persons interested in attending the public meeting who have special communication or accommodation needs are encouraged to contact the TxDOT Public Information Office at 713-802-5072 at least two working days prior to the meeting. TxDOT offices are open Monday through Friday, from 8:00 a.m. to 5:00 p.m., excluding national holidays. The public meeting will be conducted in English. Any requests for language interpreters or other special communication needs should also be made at least two working days prior to the public meeting. TxDOT will make every reasonable effort to accommodate these needs.

All interested citizens are invited to attend this public meeting. Written comments relative to the proposed project may be presented at the meeting or submitted to the Director of Project Development, Texas Department of Transportation, P.O. Box 1386, Houston, Texas, 77251-1386. Comments may also be submitted by

of Transportation, P.O. Box 1386, Houston, Texas, 77251-1386. Comments may also be submitted by email to: *HOU-PIOwebmail@dot.state.tx.us*. Written comments must be postmarked or emailed by December 28, 2009 to be included in the Public Meeting Summary Report.

The FM 762/FM 2759 (Crabb River Road) Public Meeting Summary Report will be made available for public viewing at the TxDOT website: *http://www.dot.state.tx.us/local-information/houston-district/*. Notice of availability of the Public Meeting Summary Report will be published in local newspapers when it is available for review

AFFIDAVIT OF PUBLICATION

STATE OF TEXAS:

COUNTY OF HARRIS:

Before me, the undersigned authority, a Notary Public in and for the State of Texas, on the day personally appeared: GAIL CHASTUN, who after being duly sworn, says that she is the ACCOUNTS RECEIVABLE LEAD at the HOUSTON CHRONICLE, a daily newspaper published in Harris County, Texas, and that the publication, of which the annexed herein, or attached to, is a true and correct copy, was published to-wit:

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Gail Chastun

GAIL CHASTUN
ACCOUNTS RECEIVABLE LEAD

Sworn and subscribed to before me, this the 11th Day of November A.D. 2009

NOTARY PUBLIC STATE OF TEXAS
PENNY STOW
NOTARY PUBLIC, STATE OF TEXAS
MY COMMISSION EXPIRES
FEB. 4, 2010

Penny Stow

Notary Public in and for the State of Texas

AVISO DE REUNION PÚBLICA
FM 762/FM 2759
(Crabb River Road)
10 de diciembre de 2009 - 6:00 PM a 8:00 PM
River Point
Community Church
5000 Ransom Road
Richmond Texas 77469

El Condado de Fort Bend y El Departamento de Transportación de Texas (TxDOT) realizará una junta pública (formato abierto/entre y salga como usted desea) para la presentación de las mejoras propuestas a la FM 762/FM 2759 (Crabb River Road) en el condado de Fort Bend. La reunión pública se desarrollará de la siguiente manera:

Jueves 10 de diciembre de 2009
6:00 PM a 8:00 PM
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Community Church
5000 Ransom Road
Richmond, Texas 77469

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El proyecto empieza en la interseccion de la carretera FM 2759 (Crabb River Road) con la carrelera US 59 y se extiende al sur aproximadamente 500' del nuevo complejo de Lamar Consolidated Independent School District (LCISD) ubicada en el FM 762. La distancia total del proyecto es aproximadamente 3.8 millas.

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Un resumen de la reunión, así como las respuestas a los comentarios recibidos estarán disponibles en línea en el sitio Web del TxDOT: *http://www.dot.state.tx.us/local_information/houston_district/*. Noticia de disponibilidad de este reporte de resumen será publicada en periódicos locales cuando está listo para revisar.

HOUSTON COMMUNITY NEWSPAPERS

AFFIDAVIT OF PUBLICATION

STATE OF TEXAS
COUNTY OF FORT BEND

Personally appeared before the undersigned, a Notary Public within and for said County and State, Jean Moore, Representative for the Fort Bend & Sugar Land Sun, a newspaper of general circulation in the county of Fort Bend, State of Texas, Who being duly sworn, states under oath that the report of Legal Notices, a true copy of which is hereto annexed was published in said newspapers in its issue(s) of the

12th day of December, 2009.
Spanish - Notice of Public Meeting
FM 763/FM 2759 (Crabb River Road)

_____ day of _____, 2009.

_____ day of _____, 2009.

_____ day of _____, 2009.

Publisher's Representative Ben Rubio

Sworn to and subscribed before me this 12th day of December 2009.

Dina J. Moore
Notary Public

My commission expires on 6/22/11

Fort Bend Baptist at Bracken Christian Tour.

Monday
Bellaire at Elkins, 7 p.m.
The Woodlands College Park at Hightower, 7 p.m.
Marshall at Cypress Lakes, 7 p.m.

Tuesday
Austin at Alief Hastings, 7 p.m.
Bush at Cypress Woods, 7 p.m.
Clements at Baytown Lee, 7 p.m.
Manvel at Kempner, 7 p.m.
Dulles at Clear Creek, 7 p.m.
Humble at Travis, 7 p.m.
Willowridge at Katy Seven Lakes, 7 p.m.
Incarnate Word at Fort Bend Baptist, 7 p.m.

BOYS BASKETBALL
Upcoming games

Friday
Clear Lake Christian at Fort Bend Baptist, 7:30 p.m.

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Tuesday
Sharpstown at Willowridge, 7 p.m.
Pasadena Memorial at Dulles, 7 p.m.
Kingwood at Elkins, 7 p.m.
Fort Bend Baptist at Episcopal, 7 p.m.

See SCOREBOARD, Page 2B

Most coaches like to temper their attitudes before a season begins, but Hightower High School's Deborah Mize can't ignore the obvious.

Her Lady Hurricanes are going to be good.

With eight returners from last year's Region III-5A semifinal team and what should be a difference -making low post game, Hightower enters the season as one of the teams to beat in the Houston area. The Lady Canes are ranked No. 10 in the Texas Association of Basketball Coaches state preseason poll.

Last year's Hightower team finished second in District 23-5A, and with Dulles losing McDonald's national player of the year Kelsey Bone along with several other college signees, the Lady Canes figure to be the district favorite.

"We haven't fallen off much," Mize said. "I'm in a lucky situation with the talent I get. The expe – I hate to say the frontrunner – but I would hope we win the district. I hope we go to the regional tournament, if not further than before."

That talent begins with senior guards Jasmine Brewer and Azalea Hall, but the most important players may be sophomore identical twin post players Taylor and Tyler Gilbert. Both are 6 feet, 2 inches tall and have varsity experience. Mize said both will play a tremendous role as shot blockers and rebounders.

Mize planned to have Bria Butler as the starting point guard, but she tore a knee ligament one month ago and will miss the season. The Lady Canes are so deep, though, that Mize said she expects Brittney Matthew to take over and keep Hightower from missing a beat.

Matthew will play a big role in Hightower's fast, trapping defense that is likely to create lots of turnovers.

even quicker and stronger."

As good as the Lady Hurricanes expect to be, they understand the path to the playoffs isn't a given because they play in a difficult district. At least two teams from Fort Bend ISD have advanced in the playoffs every year since 1998. The district has put two teams in the regional semifinals each of the last two seasons. At least one team has advanced beyond that every year but one since 1998.

How good is District 23-5A? Marshall won 28 games last season and did not qualify for the postseason.

"Playing in this district prepares you for the playoffs," Brewer said. "You get in and think, 'Well this team isn't even as good as our fourth- or fifth-place team.' You can't approach any games nonchalant. If you go in like that you'll have a downfall."

The top half of the district this

See HIGHTOWER, Page 3B

The high school girls basketball season began Monday night when Marshall topped Cypress Ridge 45-35. Here is a closer look at all 11 girls basketball teams in the Sun's coverage area.

AUSTIN LADY BULLDOGS

Coach: Dave Kubicsek (First year)

Last year's record: 17-17, 7-11

Last playoff appearance: None

Key players: Nicole Glaskowski (Soph./G), Lauren Hughes (Sr./F), Brooklyn McCall (Sr./PG)

Comment: Kubicsek comes from Clements and inherits a good mix of youth and experience. While that is a positive, he understands the Lady Bulldogs may not have the firepower of the top teams in the district so he may use some gimmicks to give them a

Newcomer of the Year last season and already has Division I colleges showing interest.

Kubicsek says: "You look in the gym and there are no banners. I tell the girls we want to be the first to do something. We always aim high. We'll do anything we have to do to win."

BUSH LADY BRONCOS

Coach: Christina Rankin (Fourth year)

Last year's district record: 12-6

Last playoff appearance: 2009 (Lost in first round)

Key players: Ashley Ezeh (Sr./C), Brittany Smith (Jr./G), Danesha Richardson (So./G), Victoria (Fr./G)

Comment: The Broncos face the tall task of replacing two Division I players in Caroline Davis (Kansas) and Jasmine Blakemore (Albany). The other

See PREVIEW, Page 3B

NOTICE OF PUBLIC MEETING
FM 762/FM 2759 (Crabb River Road)
December 10, 2009 – 6:00 PM to 8:00 PM

River Point Community Church
5000 Ransom Road
Richmond Texas 77469

Fort Bend County and the Texas Department of Transportation (TxDOT) will conduct a public meeting on December 10, 2009 from 6:00 pm to 8:00 pm at River Point Community Church located at 5000 Ransom Road, Richmond Texas 77469 to discuss proposed improvements to FM 762/FM 2759 (Crabb River Road). The meeting will be conducted in an open house format, so individuals may attend any time between 6:00 p.m. and 8:00 p.m. on December 10, 2009.

The proposed improvements would widen the existing FM 762/FM 2759 (Crabb River Road) roadway to a 4-lane divided curb and gutter roadway with underground storm sewer drainage. The project limits begin on FM 2759 (Crabb River Road) at US 59 and extend southward to approximately 500 feet south of the new Lamar Consolidated Independent School District (LCISD) middle school/high school complex located on FM 762, a total distance of approximately 3.8 miles. Various design options will be presented at the meeting for public review and comment. Project team members and representatives from Fort Bend County and TxDOT will be present to discuss the project and address questions. Personnel from the TxDOT Right-of-Way Division will be available to discuss the procedures, benefits, and programs, and will provide other information regarding land acquisition.

All interested citizens are invited to attend this meeting to express their views and discuss the project with members of the project team, Fort Bend County, and TxDOT representatives. The meeting will be held in an accessible location for persons with disabilities. Persons interested in attending the public meeting who have special communication or accommodation needs are encouraged to contact the TxDOT Public Information Office at 713-802-5072 at least two working days prior to the meeting. TxDOT offices are open Monday through Friday, from 8:00 a.m. to 5:00 p.m., excluding national holidays. The public meeting will be conducted in English. Any requests for language interpreters or other special communication needs should also be made at least two working days prior to the public meeting. TxDOT will make every reasonable effort to accommodate these needs.

All interested citizens are invited to attend this public meeting. Written comments relative to the proposed project may be presented at the meeting or submitted to the Director of Project Development, Texas Department of Transportation, P.O. Box 1386, Houston, Texas, 77251-1386. Comments may also be submitted by email to: HOU-PIOwebmail@dot.state.tx.us. Written comments must be postmarked or emailed by December 28, 2009 to be included in the Public Meeting Summary Report.

The FM 762/FM 2759 (Crabb River Road) Public Meeting Summary Report will be made available for public viewing at the TxDOT website: http://www.dot.state.tx.us/local_information/houston_district/. Notice of availability of the Public Meeting Summary Report will be published in local newspapers when it is available for review.

AVISO DE REUNIÓN PÚBLICA
FM 762/FM 2759 (Crabb River Road)
10 de diciembre de 2009 – 6:00 PM a 8:00 PM
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HOUSTON COMMUNITY NEWSPAPERS

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12th day of November, 2009.

English - Notice of Public Meeting FM 762/FM 2759 (Crabb Lenox Road)

_____ day of _____, 2009.

_____ day of _____, 2009.

_____ day of _____, 2009.

Publisher's Representative Bob Rubio

Sworn to and subscribed before me this 12th day of November 2009.

Notary Public

My commission expires on 6/30/11

SCOREBOARD

FOOTBALL
District 23-5A standings
Zone A

	Zone	Overall
x-Hightower	4-0	10-0
x-Elkins	3-1	8-2
Clements	2-2	7-3
Dulles	1-3	4-6
Marshall	0-4	2-7

Zone B

	Zone	Overall
x-Willowridge	4-0	5-5
x-Kempner	3-1	7-3
Travis	2-2	5-5
Bush	1-3	3-7
Austin	0-4	0-9

x-Clinched playoff berth

RESULTS

Friday
Elkins 35, Travis 29 (OT)
Kempner 14, Clements 11

Saturday
Hightower 38, Willowridge 13
Bush 38, Dulles 37
Marshall 27, Austin 16

REGION III-5A, Division 1 PLAYOFFS

Friday
Kempner vs. Clute Brazoswood, 7 p.m. (Alvin ISD's Memorial Stadium)

Saturday
Hightower vs. Galveston Ball, 2 p.m. (Alvin ISD's Memorial Stadium)

REGION III-5A, Division 2 PLAYOFFS

Saturday
Willowridge vs. Dickinson, 2 p.m. (Pearland ISD's The Rig)
Elkins vs. League City Clear Springs, 6 p.m. (Clear Creek ISD's Veterans Memorial Stadium)

TAPPS Div. 2, District 4 standings

	District	Overall
x-Second Bap.	5-1	7-4
x-Luther. North	5-1	9-1
x-Conc. Luther.	4-2	4-7
x-North. Chr.	3-3	3-7
Westbury Ch.	2-4	5-5
Luther. South	1-5	4-6
Ft. Bend Bapt.	1-5	3-7

x-Clinched playoff berth

RESULTS

Friday
Houston Christian 49, Fort Bend Baptist 7

GIRLS BASKETBALL
Upcoming games

Friday
Austin at Rosenberg Terry, 4 p.m.
Travis at Katy Seven Lakes, 5:30 p.m.
Hightower at Cypress-Fairbanks, 6 p.m.
Bush at Alief Taylor, 7 p.m.
Dulles at Katy Cinco Ranch, 7 p.m.
Elkins at Houston Wisside, 7 p.m.
Cypress Ranch at Kempner, 7 p.m.
Fort Bend Baptist at Bracken Christian Tour.

Saturday
Alief Hastings at Marshall, 1 p.m.
Fort Bend Baptist at Bracken Christian Tour.

Monday
Bellaire at Elkins, 7 p.m.
The Woodlands College Park at Hightower, 7 p.m.
Marshall at Cypress Lakes, 7 p.m.

Tuesday
Austin at Alief Hastings, 7 p.m.
Bush at Cypress Woods, 7 p.m.
Clements at Baytown Lee, 7 p.m.
Manvel at Kempner, 7 p.m.
Dulles at Clear Creek, 7 p.m.
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Fort Bend Baptist at Episcopal, 7 p.m.

See SCOREBOARD, Page 2B

Let the playoffs begin!

Fort Bend teams head into postseason with big dreams

By COREY ROEPKEN
croepken@hcnonline.com

Four Fort Bend ISD football teams will play first-round playoff games this week. Hightower and Kempner are in the Division I bracket. Willowridge and Elkins are in the Division II bracket. Here is a closer look at all four games.

FRIDAY

Kempner (7-3) vs. Brazoswood (7-3)

Where: Alvin ISD's Memorial Stadium

When: 7 p.m.

About Brazoswood: The Bucs are rolling right now. They have won four straight games, their last three by an average of 48.7 points. Brazoswood is heavy on the run and boasts 1,000-yard rusher Ricky Lunford and 600-yard rusher Marquelle Davis. The Bucs' only significant misstep this season was a 27-21 loss to a three-win Clear Brook team on Oct. 10. Their other two losses came to district champ Clear Springs and Angleton, widely regarded as the best Class 4A team in the Houston area.

Kempner update: The once porous Cougars have figured out how to play defense. They have won five games in a row and have allowed seven points per game during the last four. Kempner held explosive Elkins to 13 points two weeks ago and shut down Clements in a 14-11 victory in last week's zone playoff. The Cougars needed every bit of that effort, too, as Clements' defense solved their offense.

Outlook: It's difficult to find two hotter teams right now. Both are deserving of winning at least one playoff game. Both teams will run the ball, but Brazoswood is more traditional. Kempner's version of the veer, however, will require the Brazoswood coaches to do more teaching than they probably want to with only a week to prepare. With first-round losses to their resume the last two seasons, expect the Kempner coaches to find a way to end that streak.

Sun prediction: Kempner 24, Brazoswood 21

Photo by PATRICK SCHNEIDER

Elkins' Donte Clark is a threat both rushing and receiving. The Knights likely will call on him throughout Saturday's playoff game against League City Clear Springs.

SATURDAY

Hightower (10-0) vs. Galveston Ball (5-5)

Where: Alvin ISD's Memorial Stadium

When: 2 p.m.

About Galveston Ball: Left for the scrap heap at the start of the season, Ball High has turned in one of the best surprise performances in Houston. With Galveston still recovering from Hurricane Ike, the football team has had a smaller turnout and has had to adjust to first-year coach David Suggs. The Tors burst onto the scene on Oct. 9 when they gave 24-5A champ Clear Springs its only district loss. Quarterback Rodney Artmore and running back Dominique Brown are the workhorses in the Tors' running game. The big problem, though, is that's all they have. Artmore has completed fewer than 40 percent of his passes this season and has thrown two touchdowns versus eight interceptions.

Hightower update: The Hurricanes completed their second straight perfect regular season with a 38-13 victory over Willowridge in the 23-5A championship game, but coach Shane Hallmark wasn't happy. Hightower played without six regulars, including four on the defense. Three were dinged up and held out as a precaution. A fourth, Jeremy Woodson, walked out of the locker room on crutches with a cast on. It remains to be seen whether Hightower is healthy enough to make another deep run.

Outlook: Healthy or not, the Hurricanes don't figure to have much trouble against Ball High. Even without its best unit on Saturday against Willowridge, Hightower had no trouble after an early hiccup. This is one of the surest first-

See PLAYOFFS, Page 3B

Hightower girls hope to live up to preseason hype

By COREY ROEPKEN
croepken@hcnonline.com

Most coaches like to temper their attitudes before a season begins, but Hightower High School's Deborah Mize can't ignore the obvious.

Her Lady Hurricanes are going to be good.

With eight returners from last year's Region III-5A semifinal team and what should be a difference -making low post game, Hightower enters the season as one of the teams to beat in the Houston area. The Lady Canes are ranked No. 10 in the Texas Association of Basketball Coaches state preseason poll.

Last year's Hightower team finished second in District 23-5A, and with Dulles losing McDonald's national player of the year Kelsey Bone along with several other college signees, the Lady Canes figure to be the district favorite.

"We haven't fallen off much," Mize said. "I'm in a lucky situation with the talent I get. The expectations are as high as they've ever been. I expect that we will be - I hate to say the frontrunner - but I would hope we win the district. I hope we go to the regional tournament, if not further than before."

That talent begins with senior guards Jasmine Brewer and Azalea Hall, but the most important players may be sophomore identical twin post players Taylor and Tyler Gilbert. Both are 6 feet, 2 inches tall and have varsity experience. Mize said both will play a tremendous role as shot blockers and rebounders.

Mize planned to have Bria Butler as the starting point guard, but she tore a knee ligament one month ago and will miss the season. The Lady Canes are so deep, though, that Mize said she expects Brittney Matthew to take over and keep Hightower from missing a beat.

Matthew will play a big role in Hightower's fast, trapping defense that is likely to create lots of turnovers.

"We have a strong defense now," Hall said. "We want it even quicker and stronger."

As good as the Lady Hurricanes expect to be, they understand the path to the playoffs isn't a given because they play in a difficult district. At least two teams from Fort Bend ISD have advanced in the playoffs every year since 1998. The district has put two teams in the regional semifinals each of the last two seasons. At least one team has advanced beyond that every year but one since 1998.

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The top half of the district this

See HIGHTOWER, Page 3B

Girls basketball season preview

By COREY ROEPKEN
croepken@hcnonline.com

The high school girls basketball season began Monday night when Marshall topped Cypress Ridge 45-35. Here is a closer look at all 11 girls basketball teams in the Sun's coverage area.

AUSTIN LADY BULLDOGS

Coach: Dave Kubicsek (First year)

Last year's record: 17-17, 7-11

Last playoff appearance: None

Key players: Nicole Glaskowski (Soph./G), Lauren Hughes (Sr./F), Brooklyn McCall (Sr./PG)

Comment: Kubicsek comes from Clements and inherits a good mix of youth and experience. While that is a positive, he understands the Lady Bulldogs may not have the firepower of the top teams in the district so he may use some gimmicks to give them a chance to win each game. Glaskowski was the district's Newcomer of the Year last season and already has Division I colleges showing interest.

Kubicsek says: "You look in the gym and there are no banners. I tell the girls we want to be the first to do something. We always aim high. We'll do anything we have to do to win."

BUSH LADY BRONCOS

Coach: Christina Rankin (Fourth year)

Last year's district record: 12-6

Last playoff appearance: 2009 (Lost in first round)

Key players: Ashley Ezeh (Sr./C), Brittany Smith (Jr./G), Danesha Richardson (So./G), Victoria (Fr./G)

Comment: The Broncos face the tall task of replacing two Division I players in Caroline Davis (Kansas) and Jasmine Blakemore (Albany). The other

See PREVIEW, Page 3B

ALTERNATIVE LANGUAGE AFFIDAVIT OF PUBLICATION

STATE OF TEXAS §
COUNTY OF FORT BEND §

Before me, the undersigned notary public, on this day personally appeared

Joe R. Morales, who being by me duly sworn,
(name of newspaper representative)

deposes and says that (s)he is the Editor and Sales Representative
(title of newspaper representative)

of the Las Noticias de Fort Bend; that said newspaper is generally
(Name of Newspaper)

circulated in Fort Bend County, Texas; and
(in the municipality or the same county as the proposed facility)

is published primarily in Spanish language; that the
(alternative language)

attached notice was published in said newspaper on the following date(s):

11/18/09.

Joe R Morales
(Newspaper Representative's Signature)

Subscribed and sworn to before me this the 18 day of Nov, 2009, to certify which witness my hand and seal of office.

(Seal)

Blasa Rodriguez
Notary Public
State of Texas
My Commission Expires
03-07-2013

Notary Public in and for the State of Texas

Blasa Rodriguez
Print or Type Name of Notary Public

03-07-2013
My Commission Expires

le Serbedzija

ıality, the other on the . And although it's only the push for votes is al- igh gear. We'll let you never and whatever turns

ıt your next spelling bee. edzija has landed two in. "Harry Potter and the allows," and the other a ar project. His past roles ed "Eyes Wide Shut" and Serbedzija had better do about a name change. It's bonkers trying to spell certain other journalists ne way.

Lois D. Malibu, Calif. is not my beat, but I do ate shows when I'm away typewriter. (Yes, I said I still use my tried and tti.) Now, you asked if I t annoyed with all of annerisms, like clasping and bowing and bowing? So I turn to Dave, who is hands. Then, of course, ays Jay Leno, who rarely nds out of his pants pock- y don't you try him? You him.

N': PIECES: Interesting. ne most portrayed charac- he screen? Some are Holmes (211 times), Na- 94 times), Frankenstein cula (161), Abraham Lin- and Tarzan (99). That's r now. ... Lindsay Lohan akes news. This time her s broken into and many taken. Lindsay was prob- clubbing, and the robbers as safe to enter. ... Mean- ris has been quiet, and s been quiet. And that's it

009 King Features Synd., Inc.

• On Dec. 4, 1872, the Mary Celeste, an American vessel, is spotted sailing erratically but at full sail near the Azores Islands in the Atlantic Ocean. The ship was seaworthy, its stores and supplies were untouched, but not a soul was onboard. The reason for the abandonment of the Mary Celeste has never been determined.

• On Dec. 6, 1907, in West Virginia's Marion County, an explosion in a network of mines owned by the Fairmont Coal Company kills 361 coal miners. It was the worst mining disaster in American history. Nationwide, a total of 3,242 Americans were killed in mine accidents in 1907.

• On Dec. 1, 1913, the Ford Motor Company introduces the continuous moving assembly line. Ford's new assembly line could produce a complete car every two-and-a-half minutes, allowing the company to sell cars for less than any competitor.

• On Dec. 3, 1947, Marlon Brando's famous cry of "STELLA!" first booms across a Broadway stage, electrifying the audience during the first-ever performance of Tennessee Williams' play "A Streetcar Named Desire." When the curtain went down on opening night, the crowd erupted into a round of applause that lasted 30 minutes.

• On Nov. 30, 1954, the first known modern instance of a meteorite striking a human being occurs at Sylacauga, Ala., when a meteorite weighing 8.5 pounds crashes through the roof of a house and into a living room, bounces off a radio and strikes a woman on the hip.

• On Dec. 5, 1964, the first Medal of Honor awarded to a U.S. serviceman for action in Vietnam is presented to Capt. Roger Donlon of Saugerties, N.Y., for his heroic action earlier in the year. During an attack on July 6, 1964, Donlon was wounded four times, but kept fighting, refusing medical attention.

• On Dec. 2, 1975, Ohio State University running back Archie Griffin becomes the first player in history to win the Heisman Trophy two years in a row. In the 1976 NFL Draft, he was the first-round draft choice of the Cincinnati Bengals.

(c) 2009 King Features Synd., Inc.

AVISO DE REUNIÓN PÚBLICA

FM 762/FM 2759 (Crabb River Road)
10 de diciembre de 2009 – 6:00 PM a 8:00 PM
River Point Community Church
5000 Ransom Road
Richmond Texas 77469

El Condado de Fort Bend y El Departamento de Transportación de Texas (TxDOT) realizará una junta pública (formato abierto/entre y salga como usted desea) para la presentación de las mejoras propuestas a la FM 762/FM 2759 (Crabb River Road) en el condado de Fort Bend. La reunión pública se desarrollará de la siguiente manera:

Jueves 10 de diciembre de 2009
6:00 PM a 8:00 PM
River Point Community Church
5000 Ransom Road
Richmond, Texas 77469

El motivo de esta reunión pública es para dar a conocer la información referente al proyecto propuesto de la carretera FM 762/FM 2759 (Crabb River Road) y para solicitarle al público sus comentarios. La propuesta consiste en el amplicacion de la carretera FM 762/FM 2759 (Crabb River Road) a cuatro carriles que consistirá de cordón y cuneta con una división central.

El proyecto empieza en la interseccion de la carretera FM 2759 (Crabb River Road) con la carretera US 59 y se extiende al sur aproximadamente 500' del nuevo complejo de Lamar Consolidated Independent School District (LCISD) ubicada en el FM 762. La distancia total del proyecto es aproximadamente 3.8 millas.

La propuesta de esta junta pública es para presentar el diseño preliminario y el estado de el proyecto. Los representantes del Contado Fort Bend y el personal del equipo del proyecto de TxDOT se encontrarán presentes y estarán disponibles para responder preguntas relativas del proyecto. Personal de la oficina de derecho de via (Right-of-Way) estará disponible para explicar los procedimientos, beneficios, programas y otra información adicional con respecto a la adquisición de terrenos.

Todos interesados son invitados a asistir esta junta para expresar sus comentarios del proyecto con los representantes de TxDOT. Para personas interesadas en atender que requieren comunicación o necesidades especiales, se les sugiere que llamen al Oficial de Información Pública de el Distrito de TxDOT, numero de teléfono (713) 802-5072 por lo menos dos días hábiles de trabajo antes de la junta. Oficinas de TxDOT están abiertas de lunes a viernes de las 8:00 de la mañana a 5:00 de la tarde, excluyendo días festivos federales. La junta pública serea dirigida en Inglés. Requisitos para intérpretes de otro idioma u otra comunicación especial también deben hacerse cuando menos dos días antes de el día de la junta. TxDOT va a hacer todo esfuerzo razonable para acomodar estas necesidades.

Los comentarios escritos con respeto al proyecto propuesto se pueden presentar en la reunión o someter al: Director of Project Development, Texas Department of Transportation, P.O. Box 1386, Houston, Texas 77251-1386. Los comentarios también pueden enviarse por correo electrónico a: hou-piowebmail@dot.state.tx.us. Los comentarios enviados electrónicamente o por correo deben enviarse a más tardar el 28 de diciembre de 2009 para estar incluido en el reporte.

Un resumen de la reuniÛn, asÍ como las respuestas a los comentarios recibidos estar n disponibles en lÍnea en el sitio Web del TxDOT: http://www.dot.state.tx.us/local_information/houston_district/. Noticia de disponibilidad de este reporte de resumen ser· publicada en periÛdicos locales cuando est· listo para revisar.

Appendix B
Meeting Boards

WELCOME

Crabb River Road
(FM 2759/762)
Open House &
Public Meeting

Texas Department of Transportation

THE STATE OF TEXAS
FORT BEND COUNTY

NEED AND PURPOSE

Crabb River Road (FM 2759/762) Widening is NEEDED because:

- Fort Bend is growing and so is traffic and congestion – more capacity is a necessity.

- Growing residential and commercial development demands accommodating access to the area.

- LCISD High/Junior School complex will bring 5000 new students, faculty and staff to the area – and cars! The safety and capacity needs for this population must be addressed.

- Capacity, safety, and connectivity for the area needs to be enhanced.

Texas Department of Transportation

THE STATE OF TEXAS · FORT BEND COUNTY ·

NEED AND PURPOSE

The PURPOSE of the Crabb River Road (FM 2759/762) Widening project is to:

- Provide additional capacity in the corridor to meet projected daily traffic demands in 2035.

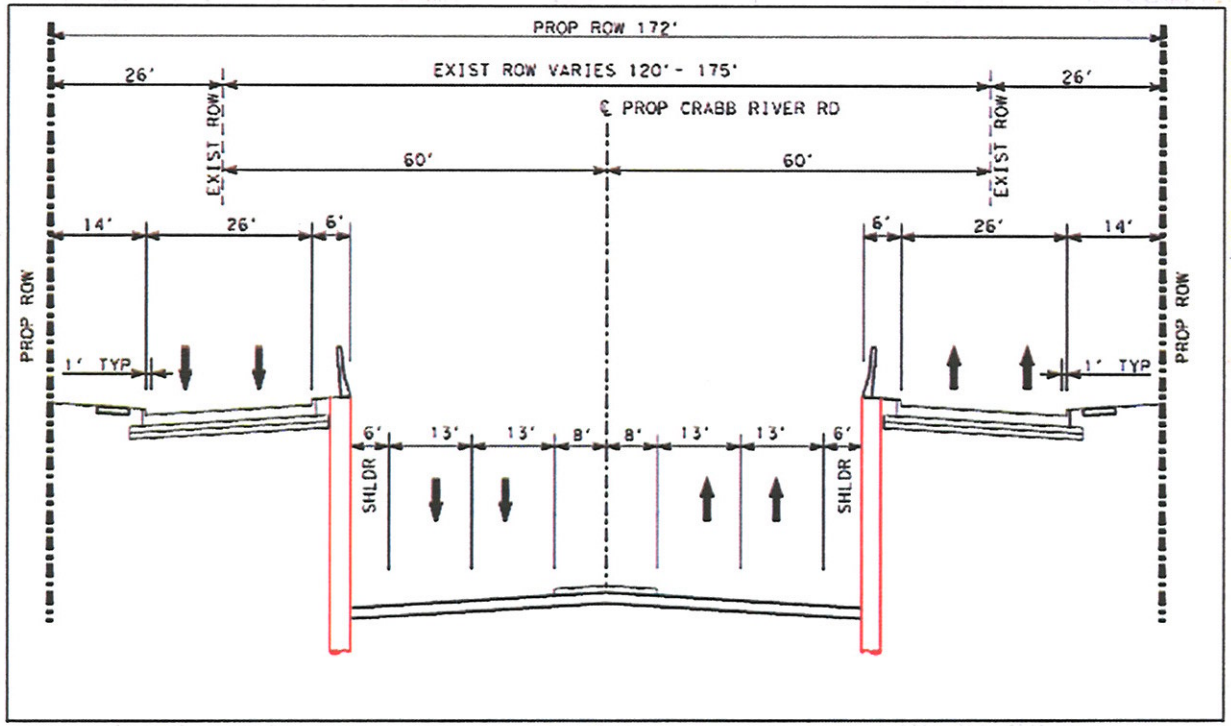
- Provide additional lanes for turning movements and safer traffic operations.

- Provide grade separation at railroad and Sansbury Boulevard to improve traffic flow.

Texas Department of Transportation

THE STATE OF TEXAS
FORT BEND COUNTY

TYPICAL SECTIONS

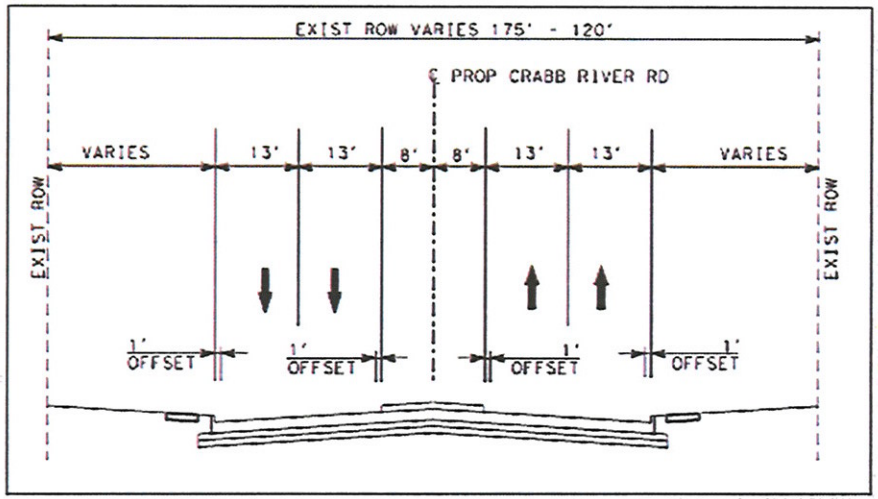


Crabb River Road (FM 2759/762)
Proposed Typical Section – at Sansbury

Texas Department of Transportation

THE STATE OF TEXAS FORT BEND COUNTY

TYPICAL SECTIONS

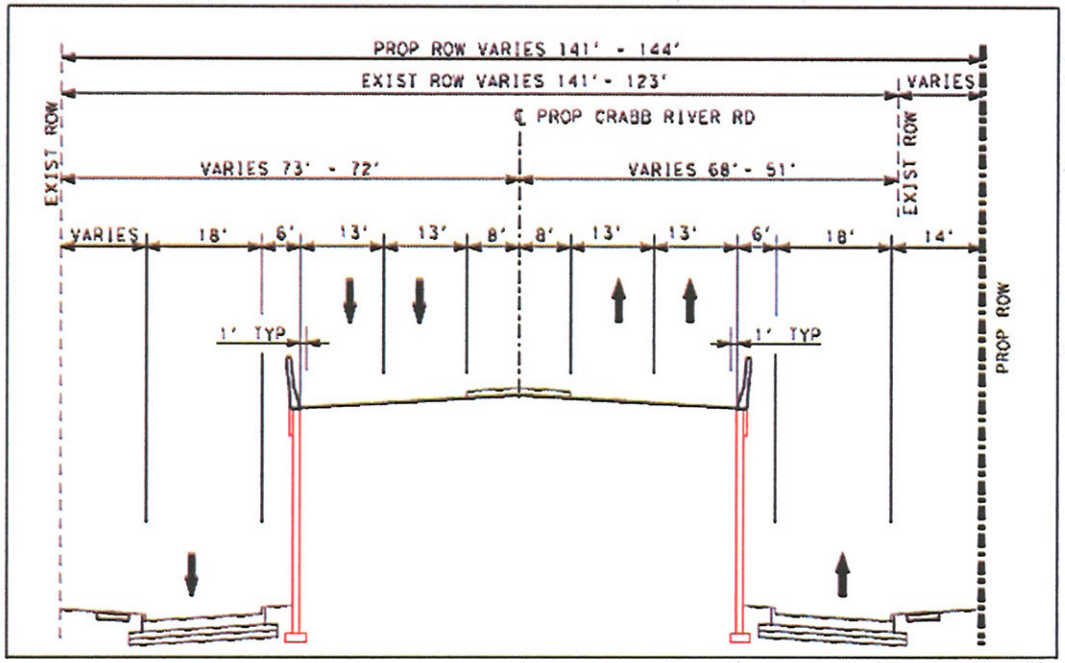


Crabb River Road (FM 2759/762)
Proposed Typical Section – south of Sansbury

Texas Department of Transportation

THE STATE OF TEXAS FORT BEND COUNTY

TYPICAL SECTIONS

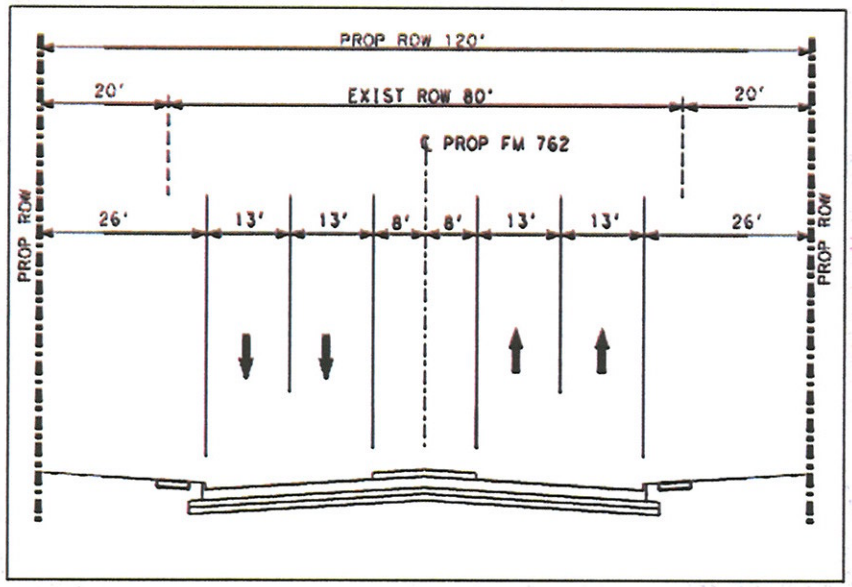


Crabb River Road (FM 2759/762)
Proposed Typical Section – Elevated at railroad crossing

Texas Department of Transportation

THE STATE OF TEXAS
FORT BEND COUNTY

TYPICAL SECTIONS

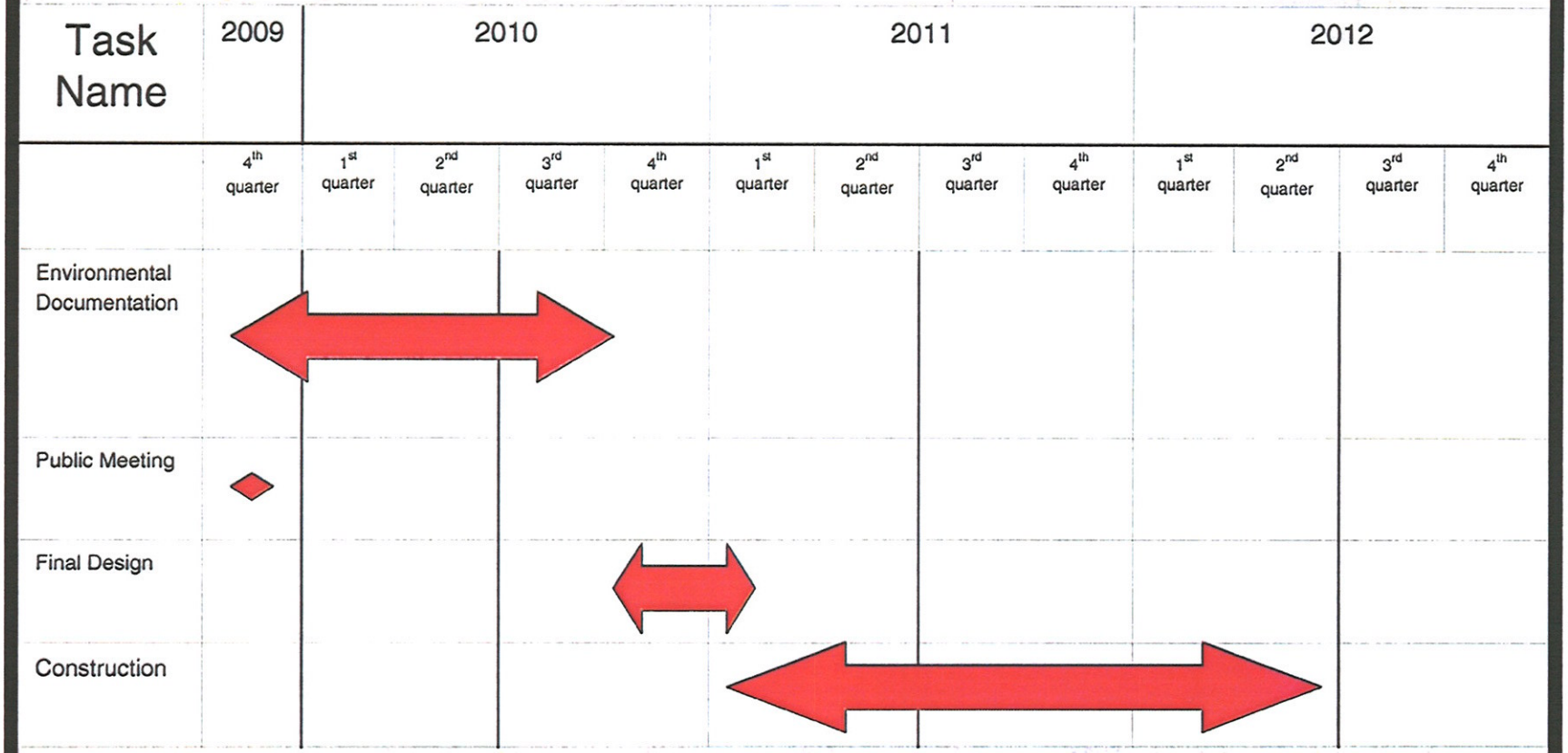


Crabb River Road (FM 2759/762)
Proposed Typical Section – south of railroad crossing

Texas Department of Transportation

THE STATE OF TEXAS
FORT BEND COUNTY

Anticipated Project Timeline

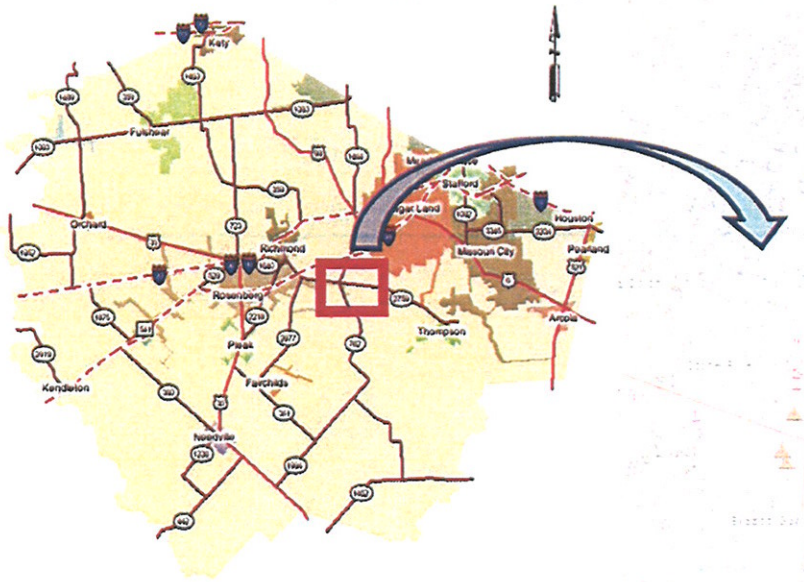


Texas Department of Transportation

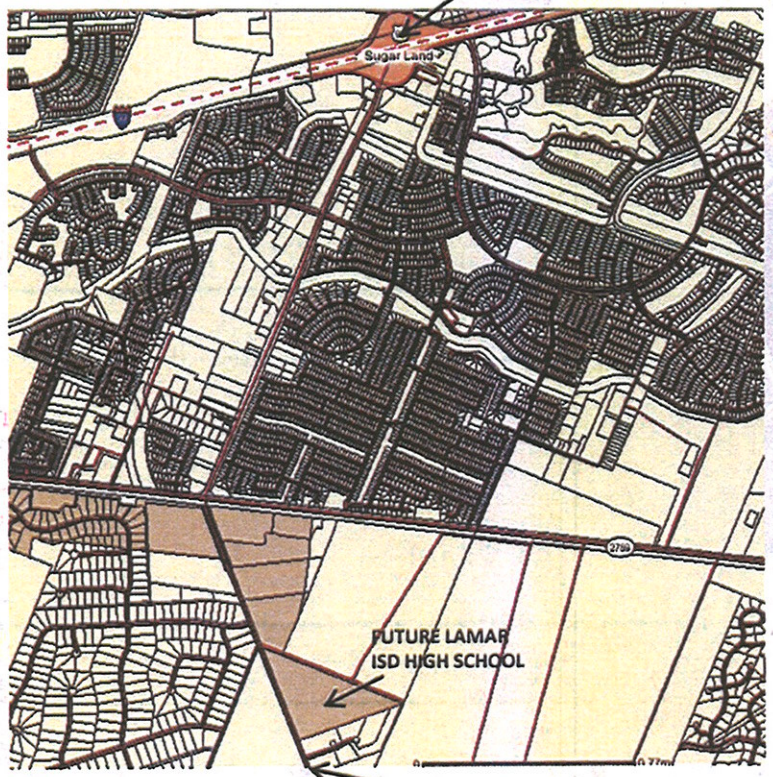
THE STATE OF TEXAS
FORT BEND COUNTY

Area Map

FORT BEND COUNTY MAP



INSET "A"



Texas Department of Transportation

* Houston-Galveston Area Council, Transportation Department, 2009

THE STATE OF TEXAS
FORT BEND COUNTY

Safety

Area	Crashes per vehicle miles traveled*
Crabb River Road (FM 2759/762)	**2.79**
Fort Bend County	1.94
Houston metropolitan region	2.07

Safety improvements include:

- Additional lane capacity to reduce conflicts between local traffic and through traffic.
- Underpass at Sansbury Boulevard to eliminate intersection crashes and reduce driveway related crashes.
- Grade separation at Burlington Northern Santa Fe line eliminates auto/train accidents.

Texas Department of Transportation

* Houston-Galveston Area Council, Transportation Department, 2009

THE STATE OF TEXAS FORT BEND COUNTY

Appendix C
Comment Forms

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): ROBERT ELSENER CONCORDE@CONCORDEREALTY.com

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[X] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below) _____

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[X] Other (Please Explain) FRIEND CALLED

Comments:

THE RAISED MEDIUM BETWEEN HWY 59 AND SANSBURY WOULD SIGNIFICANTLY IMPACT ACCESS TO OUR BUSINESS. WE SUGGEST AN AT GRADE MEDIUM THAT WOULD ACCOMODATE TURNS.

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed, or electronically submitted before December 28, 2009. An electronic version of the public meeting summary report will be available on TxDOT's website in early 2010.

Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

Texas Department of Transportation

THE STATE OF TEXAS
FORT BEND COUNTY

Additional Comments:

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): FRANK PRICE

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[X] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[X] Other (Please Explain) GREATWOOD NEWS PUB.

Comments: LOOKS GREAT!! SOONER THE BETTER.

Please make additional comments on the back.

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Email:
hou-piowebmail@dot.state.tx.us

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Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Texas Department of Transportation

THE STATE OF TEXAS
FORT BEND COUNTY

Additional Comments: _____

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Director of Project Development
Texas Department of Transportation
P.O. Box 1386
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CSJ: 1415-03-010 & 0543-03-067.cb

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):

LARRY SILVERSTEIN
7926 HEATHER DALE CT, SUGAR LAND, TX 77479

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[X] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[ ] Other (Please Explain) GREATWOOD TABLOID

Comments: MUCH BETTER THAN PREVIOUS DESIGN - MY COMPLIMENTS. THIS WE CAN SUPPORT. LS

Please make additional comments on the back.

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PUBLIC MEETING COMMENT FORM
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FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): _____

_____

_____

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[✓] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below) _____

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[✓] Other (Please Explain) Greatwood Newsletter

Comments:

- Concern about N-bound merge land entering from Sensbery in AM. Rushhour - Also may be an issue on S-bound exit to Sensbury backing up.

- Thank you for informed & courteous reps from Tx Dot at 12/10 public Meeting

Please make additional comments on the back.

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THE STATE OF TEXAS
FORT BEND COUNTY

Additional Comments:

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Texas Department of Transportation

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CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS · FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): _____

_____

_____

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[✓] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below) _____

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[✓] Other (Please Explain) Greatwood Newsletter

Comments: 1) Please minimize impact to mature trees in ROW's

2) Concerned about traffic merging @ Sansbury and Crabb River during morning and evening rush hour.

3) Prefer this to extension of Grand Parkway

Please make additional comments on the back.

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hou-piowebmail@dot.state.tx.us

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FORT BEND COUNTY

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Texas Department of Transportation

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CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS · FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Shoukat Dhanani
6671 Southwest Fwy #440
Houston, Tx. 77074.

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[X] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[X] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

Comments: I own the EXXON/Burger King at CRABB RIVER Rd and Hwy 59. We need a median Cut in front of our Business on CRABB River Rd. Current proposed drawings does not show any median Cuts. It will be devastating for our Business if there is no Cuts. Thanks.

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed, or electronically submitted before December 28, 2009. An electronic version of the public meeting summary report will be available on TxDOT's website in early 2010.

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Texas Department of Transportation
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Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

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FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS · FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Mark S. Roux
10319 Bridlewood Dr
Richmond TX 77469

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[✓] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[✓] Other (Please Explain) Bridlewood Estates newsletter

Comments: Great plan. Finally an idea that makes sense. Please press forward with speed. Congestion on Crabb River Rd. must be addressed immediately.
I am concerned about residents being able to safely exit Bridlewood Estates at Bridlewood ~~Estate~~ Drive and Berdett. Signal lights might be required.

Please make additional comments on the back.

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FORT BEND COUNTY

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PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS · FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): _____

_____

_____

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below) _____

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[ ] Other (Please Explain) ~~Personal~~ GRAND PARKWAY ASSOCIATION.

Comments: THE CRABB RIVER MEDIAN should be at level so individuals can make a turn into the business located off CRABB RIVER.

Please make additional comments on the back.

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FORT BEND COUNTY

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FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):

Robin Wilborn
111 Willoughby Ct. Richmond 77469

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[✓] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[ ] Other (Please Explain)
[✓] Letter
[ ] TxDOT Website

* I would be great if you actually had some information for the public about this as you did for the Grand Parkway.

Comments: To begin, I regret voting for Mr. Morrison in the past election. It is clear this proposal supports his personal agenda of postponing the construction of 99. My property is positioned closer to the road than any other home in the Stone River subdivision. He explained to me in this meeting I can expect to have a road approximately 4' to 6' from my fence and no plans currently exist to build any type of Privacy fence. This is a definate safety concern for my family simply because of the additional traffic and the proximity to my home. Furthermore, I intend to begin investigating my rights as a homeowner including how close a major road can be to my property.

Please make additional comments on the back.

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FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Kourash Doulati
3126 Natalias Ct.
Houston, TX 77082 (281) 704 5857

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[X] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[X] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

Comments: I'd like to request a median opening at approx station 157. I have a property with a drive way on the east side of C. River Rd. We are building a daycare at this location and a medical plaza will follow. We need access to the property coming from US 59. The Business park @ station 158 will also be affected if a median opening is not put in.

more on back →

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed, or electronically submitted before December 28, 2009. An electronic version of the public meeting summary report will be available on TxDOT's website in early 2010.

Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

Texas Department of Transportation

THE STATE OF TEXAS
FORT BEND COUNTY

Additional Comments: The majority of our business will come from Great Wood and Canyon gate. Our future patrons need access to our drive way. Thank you for your kind consideration

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Sid Seth
3015 THE HIGHLANDS Dr.
Sugar Land Tx 77478

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[✓] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [✓] TxDOT Website
[ ] Other (Please Explain)

Comments: The Crabb river road expansion should not have a raised median because it will severely impact business and land values due to loss of turning in ability in both directions, the median should be at grade level w/ the street to accomodate turns.

Please make additional comments on the back.

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PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS • FORT BEND COUNTY •

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): _____

_____

_____

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below) _____

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[ ] Other (Please Explain) _____

Comments: WITH NO MEDIAN TURN AROUNDS, IT MAKES IT INCONVENIENT FOR CUSTOMERS TO ACCESS PRIVATE BUSINESSES.

RECOMMEND FLAT MEDIANS ~~OR~~ AND IN ORDER FOR BUSINESS TURNAROUNDS

Please make additional comments on the back.

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FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS · FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): _____

_____

_____

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[X] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

_____

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

_____

Comments: I live at the corner of Crabb River and 762. the proposed road will be about 15 feet from my back door. This is unacceptable. I am sorry I cast my vote for Morrison. The only way I would quietly go away would be a buy out. The over pass and frontage road are too close for safety purposes to the homes on that end of the road

_____

Please make additional comments on the back.

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December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): DREAM ESTATE GROUP LLC
4539 PIONEER TRAIL
SUGAR LAND, TX. 77479

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[X] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[X] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

Comments: IT WAS VERY INFORMATIC TO OUR CONCERNS

Please make additional comments on the back.

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THE STATE OF TEXAS · FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): _____

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[X] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below) _____

How did you learn about this meeting:

[ ] Newspaper
[X] Letter
[ ] TxDOT Website
[ ] Other (Please Explain) _____

Comments: I AM A HOMEOWNER WHO VOTED FOR MORRISON. The letter I received in the mail stated that various proposals would be offered tonight. There is ONLY ONE PROPOSAL. I feel duped.

The answer is NOT TO WIDEN EXISTING ROADS BUT TO OFFER MORE (THOMPSON SHOULD GO THROUGH TO SUGAR LAND OR ARCOLA) THE ELEVATION OF THIS PROPOSAL WOULD EXCEED ANY HOPED FOR SOUND BARRIER AND WOULD BE AT ITS MOST INCIDIOUS DIRECTLY BEHIND MY HOME CREATING MORE POLLUTION, NOISE & LESS PRIVACY.

Please make additional comments on the back.

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I AM STRONGLY OPPOSED TO THIS PROPOSAL & WOULD WELCOME A GENUINE DISCUSSION. JAN ALLEN-CYRUS 281-795-3781

Texas Department of Transportation

Additional Comments:

Director of Project Development
Texas Department of Transportation
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Name and Mailing Address (Optional): _____

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[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below) _____

How did you learn about this meeting:

[ ] Newspaper [✓] Letter [ ] TxDOT Website
[ ] Other (Please Explain) _____

Comments: This plan would include a noise barrier - lack of privacy and pollution. Instead of an over pass, what would an underpass represent. OR maybe even a raised roadway along the drainponds built in the subdivision further down Thompson highway.

Please make additional comments on the back.

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>>> HOU-PIOWebMail HOU-PIOWebMail 12/14/2009 10:40 AM >>>
The attached message is forwarded for your handling. Thank you.

Raquelle Lewis
Public Information Office

>>>
From: "Ricard, John" <j_ricard@ti.com>
To: "hou-piowebmail@dot.state.tx.us" <hou-piowebmail@dot.state.tx.us>
CC: Teresa Ricard <t-ricard@sbcglobal.net>
Date: 12/11/2009 6:45 PM
Subject: Crabb River Road Project

Hello, I have a few questions about the meeting on 12-10-09 at River Point Church:

1. Is there a plan to build an overpass at the BNSF Railroad?

2. Is there a plan to create a new entry for Royal Lakes Estates @ FM 762 near the new high school complex in this project? I am a RLE resident and Commissioner Morrison said he would discuss this at the meeting.

3. Is there any way to view the plans online?

Thank you!

John Ricard
281-274-2006 office
713-317-1510 pgr
281-914-9858 cell

==========
We are looking for your ideas to get us where we want to go.
Join the transportation discussion during the fifth annual Texas Transportation Forum, Jan. 6-8, 2010, in Austin.
For more information, visit www.TexasTransportationForum.com

The attached message is forwarded for your handling. Thank you.

Raquelle Lewis
Public Information Office

>>>
From: "Katharine Graham" <kgraham@lcisd.org>
To: <hou-piowebmail@dot.state.tx.us>
Date: 12/15/2009 9:07 AM
Subject: Hopes High on Crabb River Road Widening...

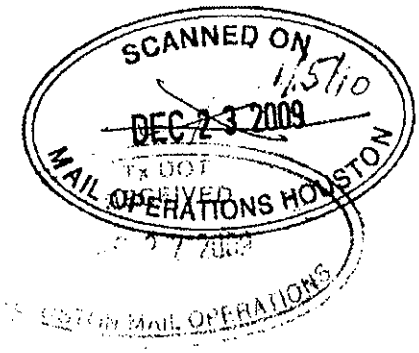
I fully support the proposed widening of Crabb River Road in Fort Bend County Precinct 1. I am a resident of the Greatwood subdivision with children getting ready to attend Lamar Consolidated Independent School District's site for a new junior high and high school campuses at George Ranch. I welcome the state's efforts to accommodate the thousands of more vehicles carrying students, parents and school staff that will be on the road with the planned opening of the schools next year. I am very concerned about the road crossing the railroad tracks as it does currently, especially with teenage drivers having to contend with negotiating the tracks with trains coming all throughout the day. My fear is that there will be a lot of kids trying to beat on-coming trains in order to be on time for school, eager to get home after school, etc. I hope that part of the expansion is taken care of first. The sooner the widening of the road starts, the better!
Thank you,
Katharine Graham

SIERRA CLUB
FOUNDED 1892

Houston Regional Group
P. O. Box 3021
Houston, Texas 77253-3021
713-895-9309
http://texas.sierraclub.org/houston/

December 19, 2009

Mr. Pat Henry, P.E.
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386



Mr. Richard Morrison
Commissioner
Fort Bend County Precinct 1
1517 Ransom Road, Suite 300
Richmond, Texas 77469

Dear Mr. Henry and Commissioner Morrison,

Enclosed are the comments of the Houston Regional Group of the Sierra Club (Sierra Club) regarding the Texas Department of Transportation (TxDOT) and Fort Bend County proposal to expand FM 2759/FM 762 to four lanes from two lanes, from U.S. 59 to about 500 feet past the new Lamar Consolidated School District school complex (about 3.8 miles).

1) The Sierra Club supports portions of this proposal including the underpass at Sansbury Blvd.; an overpass at the intersection of FM2759/FM 762 and the existing railroad track; landscaping and tree planting; and a hike/bike trail that will access adjacent or nearby neighborhoods. Some portions of this proposal address local needs and fit in well with what the local community wants. This is good.

2) The Sierra Club understands that funding may also be sought for alternative energy installations (wind or solar) that would be constructed near this road to provide power for traffic lights and other safety features. If wind energy power is sought then studies must be conducted to ensure that any potential bird mortality due to strikes against windmills will be mitigated to acceptable levels as determined by Texas Parks and Wildlife Department and U. S. Fish and Wildlife Service.

3) The Sierra Club supports the placement of noise barriers on the overpass across the railroad tracks that cross FM 762. The Sierra Club recently drove the potential route of the proposed road expansion and saw that several church related complexes either have been built or will soon be built near this overpass. The people and children that visit, go to school, work, and worship at these

institutions should be protected from the negative impacts of noise due to the increase in traffic that will be created by the construction of the road expansion and the completion of the nearby school complex.

4) The Sierra Club does not want to simply plan for our children to be "on the edge of their safety zone" with regard to air pollution. We want to make sure there is a margin of safety so our children are safe and healthy. The Lamar Consolidated School District school complex is only a few hundred feet away from the proposed road expansion. Children, teachers, administrators, parents, and all people need to be protected from air and noise pollution that comes from nearby roads.

Various studies have indicated that people living near roads (within about 1,000 feet) have a greater health risks due to their exposure to greater levels of air pollution. Children have an even greater risk due to air pollution because their bodies are growing and developing. Some of these studies and the distances from roads that may be dangerous to people's health or cause an increase in exposure and risk that are documented in these studies are:

1. 750 feet (250 yards), "Distance-weighted traffic density in proximity to a home is a risk factor for leukemia and other childhood cancers," by Watchell Pearson, Robert L. Pearson, and Kristie Ebie, Journal of Air and Waste Management Association 50: 175-180, 2000.

2. 660 feet (220 yards), "Childhood Asthma Hospitalization and Residential Exposure to State Route Traffic," by Shao Lin, et. al., Environmental Research Section A, Volume 88, pp. 73-81, 2002.

3. 990 feet (330 yards), "Concentration and size distribution of ultra-fine particles near a major highway," by Yifang Zhu, et. al., Journal of the Air and Waste Management Association, September 2002, and "Study of ultra-fine particles near a major highway with heavy-duty diesel traffic," Atmospheric Environment, 36(2002), 4323-4355.

4. 270 feet (90 yards), "Living Near a Main Road and the Risk of Wheezing Illness in Children," by Venn, et. al., American Journal of Respiratory and Critical Care Medicine, Volume 164, pp. 2177-2180, 2001.

5. 15,849 feet (3 miles), "Hazard proximities of childhood cancers in Great Britain from 1953-1980," by Knox and Gilman, Journal of Epidemiology and Community Health, 51:151-159, 1997.

6. 300 feet (100 yards), "Traffic, Air Pollution and Mortality Rate Advancement Periods," by M. Finkelstein, M. Jerrett, and M. Sears, American Journal of Epidemiology, Volume 160, pp. 173-177, 2004.

7. 400 feet (150 meters), "Air Pollutant Concentrations Near Texas Roadways," by David Allen, et. al., Texas Commission on Environmental Quality, Draft Final Report, Service Order 18, Contract No. 582-4-56385, August 31, 2007.

8. 225 feet (75 meters), "Traffic, Susceptibility, and Childhood Asthma," by Rob McConnell, et. al., Environmental Health Perspectives, Volume 114, Number 5, May 2006.

9. 1,640 feet (500 meters), "Effects of exposure to traffic on lung development from 10 to 18 years of age: a cohort study, Gauderman, et. al., www.thelancet.com, Volume 368, January 26, 2007.

In addition, the study "Association Between Local Traffic-Generated Air Pollution and Preeclampsia and Preterm Delivery in the South Coast Air Basin of California," by Jun Wu, et. al., shows there are increases in preeclampsia (a multi-system disorder in pregnant women characterized by elevated blood pressure, edema, and protein in the urine) and preterm delivery near roadways in California.

Other documents that deal with air pollution effects on people near roadways include:

1. Particulate Matter and Air Toxic Pollutant Exposures Near Heavily Traveled Roadways in the U.S., by Patricia Rowley and Richard Cook, U.S. EPA.

2. Bibliography of Near Roadway Health Effects (I) and Exposure Studies (II), U.S. EPA, March 2007.

3. Highway Health Hazards, Sierra Club 2004.

4. Freeways & Health: Recent Studies, Dr. Winifred J. Hamilton, June 4, 2002.

5. Diesel and Health in America: The Lingering Threat, Clean Air Task Force, February 2005.

6. Health Assessment Document for Diesel Engine Exhaust, U.S. EPA, May 2002.

7. Health Effects of Air Pollution: Beyond the Criteria Pollutants, Dr. Philip Bromberg, et. al., Air Toxics Workshop II, Section 1, Mickey Leland Center, June 12, 2007.

8. Near-Roadway Exposure and Health, Chad Bailey, U.S. EPA, Office of Transportation and Air Quality, Air Toxics Workshop II, Mickey Leland Center, June 12, 2007.

9. Air Pollutant Concentrations Near Texas Roadways, David Allen, et. al., Draft Final Report, Texas Commission on Environmental Quality, August 31, 2007.

These studies and others should be used in determining potential environmental impacts due to the proposed expansion of 3.8 miles of Crabb River Road (FM 2759/FM762), from a two-lane to a four-lane road, from U.S. 59 South to 500 feet past the Lamar Consolidated Independent School District school complex in Fort Bend County. In addition, these studies should be used to develop mitigation measures to reduce any potential air pollution health impacts that may occur to humans due to the implementation of this proposal. The U.S. Environmental Protection Agency has done and continues to conduct research on this issue and should be contacted for assistance.

The Sierra Club has already provided most of these studies to Commissioner Morrison recently and to the TxDOT during the comment periods for the environmental impact statements for the proposed Grand Parkway, Segment E and Trans-Texas Corridor/Interstate 69 projects. If TxDOT would like to receive copies of these studies again please contact me (my contact information is at the end of this comment letter) and I will make hard copies and provide them to TxDOT.

5) The Sierra Club is enclosing with this letter the studies "Traffic, Air Pollution and Mortality Rate Advancement Periods," by M. Finkelstein, M. Jerrett, and M. Sears, American Journal of Epidemiology, Volume 160, pp. 173-177, 2004 and "Effects of exposure to traffic on lung development from 10 to 18 years of age: a cohort study, Gauderman, et. al., www.thelancet.com, Volume 368, January 26, 2007, which provide additional information about the potentially harmful air pollution impacts of roads.

6) Some studies suggest that air pollution interacts with noise pollution to cause additive environmental impacts on human health/welfare. Other pollution hazards that are of concern include in-vehicle levels of air pollution which drivers and passengers breathe; vehicle in motion concentrations of air pollutants that are emitted during actual driving conditions/routes; and actual noise levels at major roads out to at least 1,000 feet.

The Sierra Club strongly recommends that TxDOT and Fort Bend County protect children and other people that work and visit the Lamar Consolidated Independent School District school complex on FM 762 from air and noise pollution by requiring mitigation measures. The Sierra Club particularly recommends that a noise wall and series of off-set tree plantings (3-5 rows) be constructed and implemented near the boundary of the school property and the expanded FM 762 to reduce both noise and air pollution.

Trees and shrubs used for the green living noise and air pollution barrier should be a mixture of local Columbia Bottomland species found in the Brazos River

Floodplain. Species should be used that grow to different heights (understory, midstory, and overstory trees) to ensure that air and noise pollution is filtered or attenuated at all height levels. Some acceptable local species of trees or shrubs include Bur Oak, Shumard Oak, Live Oak, Water Oak, Pecan, Sugarberry, Cedar Elm, Green Ash, Red Bud, Rough-Leaf Dogwood, American Elm, Carolina Laurel Cherry, Water Hickory, Bald Cypress, Soapberry, Little Hip Hawthorn, Deciduous Holly, Yaupon Holly, Swamp-Privet, Button-Bush, Box Elder, Black Willow, Honey Locust, and Dwarf Palmetto.

This area can also be landscaped attractively with small ponds to provide wildlife habitat as well as serve as a scenic frontispiece for the school complex as well as serve as a noise and air pollution mitigation area.

Enclosed is an article entitled "The effects of roadside structures on the transport and dispersion of ultrafine particles from highways," by George E. Bowker, et. al., Atmospheric Environment, article in press, accepted June 27, 2007, which states "Results indicated that air pollutant concentrations near the road were generally higher in open terrain situations with no barriers present" and documents that noise barriers and trees can reduce air pollution near roads.

7) Crabb River Road/FM 2759/FM 762 should be the gateway to Brazos Bend State Park. If this is going to occur then plantings of tree and shrub species mentioned above (representative of the Columbia Bottomlands) should be planted to line both sides of the road. Later projects for this road should extend this theme planting all the way to Brazos Bend State Park.

The Sierra Club appreciates the opportunity to provide these scoping comments. **The Sierra Club requests a copy of the draft environmental assessment so that we can comment on the proposal.** Thank you.

Sincerely,

Brandt Mannchen
Chair, Air Quality Committee
Houston Regional Group of the Sierra Club
5431 Carew
Houston, Texas 77096
713-664-5962
brandtshnfbt@juno.com

Traffic, Susceptibility, and Childhood Asthma

Rob McConnell,[1] Kiros Berhane,[1] Ling Yao,[1] Michael Jerrett,[1] Fred Lurmann,[2] Frank Gilliland,[1] Nino Künzli,[1] Jim Gauderman,[1] Ed Avol,[1] Duncan Thomas,[1] and John Peters[1]

[1]Department of Preventive Medicine, Keck School of Medicine, University of Southern California, Los Angeles, California, USA; [2]Sonoma Technology Inc., Petaluma, California, USA

Results from studies of traffic and childhood asthma have been inconsistent, but there has been little systematic evaluation of susceptible subgroups. In this study, we examined the relationship of local traffic-related exposure and asthma and wheeze in southern California school children (5–7 years of age). Lifetime history of doctor-diagnosed asthma and prevalent asthma and wheeze were evaluated by questionnaire. Parental history of asthma and child's history of allergic symptoms, sex, and early-life exposure (residence at the same home since 2 years of age) were examined as susceptibility factors. Residential exposure was assessed by proximity to a major road and by modeling exposure to local traffic-related pollutants. Residence within 75 m of a major road was associated with an increased risk of lifetime asthma [odds ratio (OR) = 1.29; 95% confidence interval (CI), 1.01–1.86], prevalent asthma (OR = 1.50; 95% CI, 1.16–1.95), and wheeze (OR = 1.40; 95% CI, 1.09–1.78). Susceptibility increased in long-term residents with no parental history of asthma for lifetime asthma (OR = 1.85; 95% CI, 1.11–3.09), prevalent asthma (OR = 2.46; 95% CI, 0.48–4.09), and recent wheeze (OR = 2.74; 95% CI, 1.71–4.39). The higher risk of asthma near a major road decreased to background rates at 150–200 m from the road. In children with a parental history of asthma and in children moving to the residence after 2 years of age, there was no increased risk associated with exposure. Effect of residential proximity to roadways was also larger in girls. A similar pattern of effects was observed with traffic-modeled exposure. These results indicate that residence near a major road is associated with asthma. The reason for larger effects in those with no parental history of asthma merits further investigation. *Key words:* air pollution, asthma, child, epidemiology, traffic. *Environ Health Perspect* 114:766–772 (2006). doi:10.1289/ehp.8594 available via *http://dx.doi.org/* [Online 16 February 2006]

Childhood asthma prevalence and incidence have been associated with local variation in traffic patterns within communities in many (Brauer et al. 2002; Gauderman et al. 2005; Nicolai et al. 2003; van Vliet et al. 1997; Venn et al. 2000; Zmirou et al. 2004) but not all (English et al. 1999; Waldron et al. 1995; Wjst et al. 1993) studies that have examined the impact of local traffic or traffic-related air pollutants near children's homes. However, many studies did not evaluate exposure at early age, which may be an important determinant of risk from traffic-related pollution (Zmirou et al. 2004) and which might vary depending on residential stability of study participants. The duration of residence at the same home might also be expected to increase any risk of asthma associated with traffic-related exposure. Other characteristics that might make children more susceptible to this exposure include parental history of asthma and childhood allergy, which are strong risk factors for asthma (London et al. 2001; Peden 2000). A recent study found larger associations of traffic with asthma in children without a parent with asthma (Gordian et al. 2005), and we have previously found that children with incident asthma associated with ozone were less likely to have a parental history of asthma than were other children with asthma (McConnell et al. 2002). Susceptibility to second-hand tobacco smoke exposure, another environmental combustion product, and traffic-related pollutants has been found to vary by atopy in some studies that have examined this relationship (Janssen et al. 2003; Kershaw 1987; Palmieri et al. 1990; Strachan and Cook 1998; Strachan et al. 1996a, 1996b; Zmirou et al. 2004). Some evidence also suggests that girls may be more susceptible than boys to traffic-related exposure (Oosterlee et al. 1996; Pershagen et al. 1995; Shima et al. 2003; van Vliet et al. 1997; Venn et al. 2001).

Concentrations of pollutants in fresh vehicular exhaust are high near roadways but decline markedly within 150–300 m (Gilbert et al. 2005; Zhu et al. 2002). Accurate assessment of this large but very local variation in exposure may be important to identify health hazards. One promising approach has been to estimate residential distance to a major roadway. This can be done with relatively little error in measurement, using geographic information systems and accurately located roadways. Some studies have found increased asthma prevalence in children living within 100 m of a major road, and there is evidence that the risk increases dramatically within 75 m (van Vliet et al. 1997; Venn et al. 2001).

In this population-based study, we examined characteristics that might increase childhood susceptibility to the effects of traffic-related air pollution in a new cohort in the southern California Children's Health Study, an ongoing longitudinal evaluation of air pollution and respiratory health (Künzli et al. 2003). We evaluated whether parental history of asthma and child age at exposure, symptoms of allergy, and sex influenced susceptibility to the risk of childhood asthma and wheeze associated with exposure to traffic.

Materials and Methods

Population. A new cohort was recruited in 2003 from schools in 13 southern California communities (shown in Figure 1). Nine communities were the same as in the original Children's Health Study cohorts, and four were new. All students present in 2003 in all kindergarten and first grade classrooms (5–7 years of age) in participating schools were given a questionnaire and informed consent to take home for parents to complete. Informed consent, approved for this study by the University of Southern California Institutional Review Board, was obtained, and questionnaires were completed and returned for 5,341 (65%) of 8,193 eligible children.

Assessment of exposure to traffic-related pollutants. We estimated distance of each participant's residence to the nearest major road, including freeways, other highways, and arterial roads. Participant residence addresses were standardized, and their locations were geocoded to 13 m perpendicular to the side of the adjacent road, using the Tele Atlas Multinet road network data (Tele Atlas Inc.,

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Supplemental material is available online at http://www.ehponline.org/members/2006/8594/suppl.pdf

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Menlo Park, CA). Distance to the nearest major road was estimated using ArcGIS software (version 8.3; Environmental Systems Research Institute Inc., Redlands, CA). Each direction of travel was represented as a separate roadway, and the shortest distance was estimated from the residence to the middle of the nearest side of the freeway or major road. We included in the analysis only children with addresses that could be accurately geocoded. Specifically, only residential addresses for which the Tele Atlas geocoding software assigned its highest-quality match code were included. These addresses are located on the correct side of the street with their relative position between cross-streets determined by linear interpolation of residence number between the nearest intersections.

Residential distance to a major road was categorized as < 75 m, 75–150 m, > 150–300 m, and > 300 m, based on results of previous studies showing markedly increased exposure and risk of asthma within 75 m of large roadways, which decreased to background levels by 150–300 m (Gilbert et al. 2005; van Vliet et al. 1997; Venn et al. 2001; Zhu et al. 2002). We also estimated residential exposure to fresh traffic-modeled pollutants from local freeway and nonfreeway sources, accounting for traffic volume, wind speed, and direction in each community, using a line source dispersion model, as described in the accompanying online supplemental material (http://www.ehponline.org/members/2006/8594/suppl.pdf).

Health outcomes and other questionnaire information. We classified lifetime asthma based on a questionnaire response to the question "Has a doctor ever diagnosed this child as having asthma?" Current wheeze was defined to include children with any wheezing in the previous 12 months [International Study of Asthma and Allergies in Children (ISAAC) Steering Committee 1998]. Prevalent asthma was defined as the reported use of controller medications for asthma (inhaled corticosteroids, leukotriene inhibitors, cromolyn sodium, or long-acting beta agonists) in the previous year or lifetime asthma with any wheeze in the previous year. In addition, children without a physician's diagnosis who had severe wheeze in the previous 12 months were included as prevalent asthmatics to identify asthma undiagnosed because of poor access to medical care. Severe wheeze included four or more attacks of wheeze, one or more nights per week of wheeze, or wheeze with shortness of breath so severe as to interfere with speech (ISAAC Steering Committee 1998).

We collected personal and family covariates and housing characteristics by questionnaire, including child's race and date of birth and the language in which the questionnaire was completed (Spanish or English). Potentially susceptible groups were identified based on child's sex, allergic characteristics defined as a history of hay fever or a problem with sneezing or runny or blocked nose when the child did not have a cold, parental history of asthma, and residence (exposure) in the current home since 2 years of age or earlier. Information on potentially confounding exposures or characteristics included maternal smoking while pregnant with the child, current second-hand tobacco smoke exposure, family income and responding parent's education, current coverage of the child by a health insurance plan, and housing characteristics, which included pets inside the home (dog, cat, bird, other furry or hairy pets, or other pets), cockroaches, rats or mice, carpeting, water damage or mold or mildew in the home since the child lived there, use of an air conditioner, second-hand tobacco smoke, and a combustion source for nitrogen dioxide in the home (a gas oven or stove or heating unit with a pilot light).

Statistical analysis. The odds ratio (OR) for each distance category was estimated with residences further than 300 m as the reference group, using logistic regression. All models were adjusted for the child's age, sex, race, community, and language of questionnaire completion. To assess the effect of long-term and early-life exposure, some analyses were stratified into children living since 2 years of age or younger at the same residence and those moving to the current residence at a later age. Confounding was evaluated by assessing whether the coefficient of the log OR for exposure changed by > 10% after adding an additional covariate to this basic model. We assessed effect modification by parental history of asthma and the child's history of allergic symptoms and sex by modeling the interaction of the potential effect modifier with exposure category (or with traffic-modeled exposure, as described in the online supplemental material) and by examining the effects of exposure by strata.

We also fitted logistic additive models (Hastie and Tibshirani 1990) to assess the functional relationship between childhood asthma and proximity to major roads. These models used the smoothing spline with 3 degrees of freedom for the continuous distance from major road and used the same adjustment variables as in the linear logistic models described above.

Significance was defined as two-sided $p < 0.05$ for all analyses. The logistic additive models were fitted using the S-plus programming language (Venables et al. 2002). All other analyses were performed using the Statistical Analysis System (SAS version 9.0; SAS Institute Inc., Cary, NC).

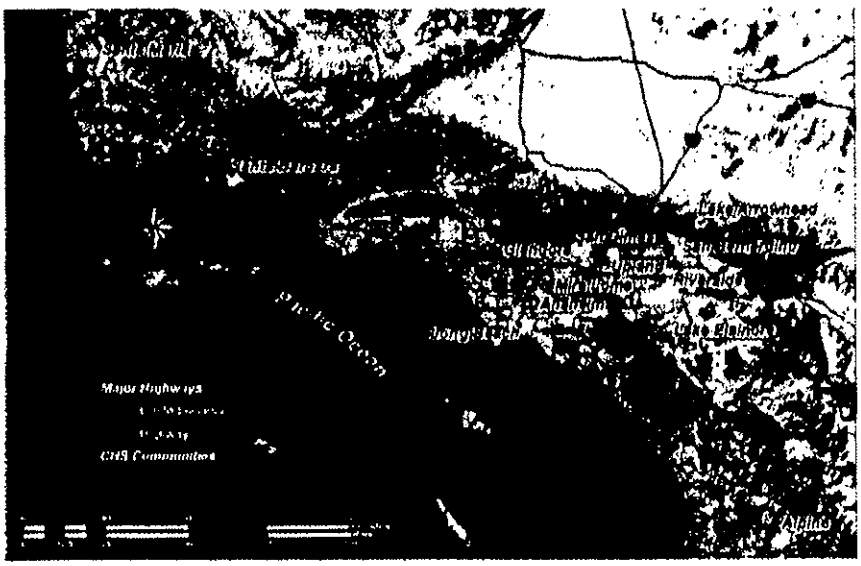

Figure 1. Location of study communities.

Results

Of the 5,341 children completing a questionnaire and informed consent, 4,762 had an address that could be accurately matched and geocoded. Among these, there were 650 reports of ever physician-diagnosed asthma (14%); 577 cases of prevalent asthma (13%) based on current severe symptoms, use of controller medications, or lifetime asthma with current wheeze; and 682 children with current wheeze during the previous year (15%). Although there was some overlap of these phenotypes, 38% of children with lifetime asthma had no current wheeze, 16% with prevalent asthma had no current wheeze (based primarily on use of controller medications in prevalent asthma), and 17% of prevalent asthma

cases had no lifetime reported doctor diagnosis of asthma. The mean (± SD) age was 6.5 ± 0.68 years. The frequency of other characteristics of children, parents, and households is shown in Table 1. Most children were Hispanic, and almost one-quarter of parents completed a questionnaire in Spanish. Eighteen percent of parents reported that annual household income was < $15,000, and 22% had less than a high school education. Forty-two percent of children had lived at the same address since 2 years of age or younger.

The mean (± SD) distance from the child's residence to a major road was 418 ± 519 m (median, 254 m; range, 0.02–7,516 m). (Error in precisely locating homes and roadways accounted for distances less than the 13-m offset from the street used in geocoding residences.) Most residences (56.6%) were within 300 m of a major road: 25.2% were between 150 and 300 m, 16.4% between 75 and 150 m, and 15% within 75 m.

Table 1. Demographic characteristics and potential confounders or susceptibility factors.

Characteristic	No. (%)[a]
Child	
Sex	
Male	2,425 (51)
Female	2,295 (49)
Race	
North American Indian	44 (0.93)
Asian	170 (3.6)
Black	197 (4.2)
Hispanic white	2,617 (55)
Non-Hispanic white	1,682 (35)
Other	32 (0.67)
Health insurance	3,985 (88)
Long-term residence	1,856 (42)
Allergy	1,834 (44)
In utero tobacco smoke	360 (7.9)
Parent	
Spanish questionnaire	1,091 (23)
Family income	
< $7,500	279 (6.9)
$7,500–14,999	456 (11)
$15,000–29,999	692 (17)
$30,000–49,999	709 (18)
$50,000–74,999	726 (18)
$75,000–99,999	535 (13)
≥ $100,000	639 (16)
Parental education	
< 12th grade	982 (22)
Grade 12	880 (20)
Some post-high school	1,681 (38)
Four years of college	512 (11)
Some postgraduate	417 (9.3)
Parental asthma	965 (23)
Home	
Any pet	2,479 (54)
Dog	1,337 (29)
Cat	841 (18)
Bird	462 (10)
Cockroach	487 (11)
Mice	366 (8.1)
Rats	189 (4.2)
NO_2 source	3,358 (72)
Air conditioner	2,763 (60)
Carpeting	4,230 (92)
Water damage	653 (14)
Mold or mildew	1,068 (25)
Second-hand smoke	794 (18)

[a]Total (% of total) with each characteristic; denominator varies due to missing values or "don't know" responses.

The risk of asthma-related outcomes was associated with residential distance to a major road (Table 2). Compared with those living at least 300 m from a major road, there were increased risks for all three outcomes among children within 75 m. For both prevalent asthma and current wheeze, there was increasing risk with decreasing residential distance to the roadway. Among long-term residents (living since 2 years of age at the same home), risk was increased only among those living within 75 m of a major road, and the ORs were slightly larger than the corresponding ORs in the entire population. Confounding by housing characteristics or other covariates from Table 1 was assessed among long-term residents, and the effect of living within 75 m of a major road was not substantially changed.

We examined interactions of exposure with the susceptibility factors in the sample restricted to long-term residents, because exposure in this group was more likely to have been accurately assigned for the period during which asthma developed than for children moving later. Parental asthma modified the effect of living within 75 m of a major road (Table 3). There were almost 2-fold (lifetime asthma) to almost 3-fold increased risks (current wheeze) associated with this exposure, but only among those children without a parental history of asthma. The interaction of parental history with residential proximity within 75 m was significant for prevalent asthma (1 degree of freedom, Wald chi-square 4.39; $p = 0.04$) and for current wheeze ($p = 0.01$), but not for lifetime asthma.

Among long-term residents who had no allergic symptoms, greater than 2-fold increased risks of all three outcomes were associated with living in a residence within 75 m of a major road (Table 4). However, there were no significant interactions of allergy with this exposure for any of the three outcomes.

Among boys, there was little evidence of increased risk associated with residential distance to a major road (Table 5). Among girls, strong associations with living within 75 m of a major road were observed for all three outcomes, and the difference between boys and girls was significant for lifetime asthma (1 degree of freedom interaction, $p = 0.02$).

Table 2. Association of asthma and wheeze with distance to a major road [OR (95% CI)].[a]

Major road distance (m)	No.[b]	Lifetime asthma	Prevalent asthma	Current wheeze
All participants				
> 300	2,058	1.00	1.00	1.00
150–300	1,193	0.92 (0.73–1.15)	1.04 (0.82–1.33)	1.02 (0.82–1.27)
75–150	778	1.06 (0.82–1.36)	1.33 (1.02–1.72)*	1.30 (1.02–1.66)*
< 75	713	1.29 (1.01–1.66)*	1.50 (1.16–1.95)**	1.40 (1.09–1.78)**
Long-term residents				
> 300	813	1.00	1.00	1.00
150–300	483	0.86 (0.59–1.24)	0.83 (0.56–1.21)	0.97 (0.69–1.38)
75–150	294	1.03 (0.68–1.56)	1.09 (0.71–1.66)	1.09 (0.73–1.62)
< 75	266	1.46 (0.98–2.17)	1.64 (1.10–2.44)*	1.67 (1.14–2.43)**

[a]Adjusted for age, sex, language of questionnaire, community, and race. [b]Total exposed in each category of distance to a major road. *$p < 0.05$; **$p < 0.01$.

Table 3. Association of asthma and wheeze with distance to a major road among long-term residents, by parental history of asthma [OR (95% CI)].[a]

Major road distance	No parental asthma (n = 1,330)	Parental asthma (n = 380)
Lifetime asthma[b]		
> 300 m	1.00	1.00
150–300 m	1.06 (0.65–1.71)	0.62 (0.30–1.25)
75–150 m	1.13 (0.64–1.97)	0.75 (0.34–1.63)
< 75 m	1.85 (1.11–3.09)*	1.03 (0.47–2.24)
Prevalent asthma		
> 300 m	1.00	1.00
150–300 m	0.94 (0.57–1.58)	0.67 (0.33–1.37)
75–150 m	1.21 (0.69–2.14)	0.80 (0.37–1.74)
< 75 m	2.46 (1.48–4.09)**	0.79 (0.34–1.82)
Current wheeze		
> 300 m	1.00	1.00
150–300 m	1.02 (0.64–1.64)	0.96 (0.51–1.80)
75–150 m	1.37 (0.81–2.31)	0.88 (0.42–1.83)
< 75 m	2.74 (1.71–4.39)**	0.87 (0.40–1.90)

[a]Adjusted for age, sex, language of questionnaire, community, and race. [b]Participants from Lake Arrowhead were excluded from the model for stratum with no parental asthma, because otherwise the model failed to converge. *$p < 0.05$; **$p < 0.01$.

Among children with no family history of asthma, we examined further the relationship of asthma and distance to a major road within 500 m of the home, using smoothed models. Among long-term residents, an increasing rate of prevalent asthma was observed with residential proximity to the nearest major road, and the risk decreased to background levels at 150–200 m (Figure 2). This trend was observed only among children living at the same address since 2 years of age. Children moving to the current residence after 2 years of age showed no effect of proximity to a major road. A similar pattern of effects was observed for lifetime asthma and wheeze (data not shown).

The effects of pollutants in fresh traffic exhaust modeled from traffic volume, distance, and meteorology were generally consistent with those observed for proximity to a major road (see online supplemental material). There were significant associations of nonfreeway (but not of freeway or total) traffic-modeled exposure with prevalent asthma and current wheeze, and these effects were stronger in long-term residents (Table S-2 in the online supplemental material). The stratum-specific pattern of traffic-modeled effects was also stronger in those with no parental history and with no allergic symptoms and among girls (Table S-3 in the online supplemental material).

Discussion

Asthma and wheeze were strongly associated with residential proximity to a major road. These associations were strongest among children with no parental history of asthma who had lived at the same address since early in life. In this group, the highest risk occurred adjacent to the major road, and risk decreased to background rates at 150–200 m from the road. Larger risks of asthma associated with long-term residence within 75 m of a major road were observed among girls than among boys.

If traffic-related pollutants were responsible for the observed associations with asthma, the increased risk among the longer-term residents might be expected because they had a larger cumulative exposure to the pollutant indicators used in this analysis. However, the absence of any effect of a major road among children moving to their residence after 2 years of age (Figure 2) may indicate vulnerability during the prenatal period or infancy. Although the study design did not allow us to distinguish between these two possibilities, there is evidence that other early-life exposures may increase the risk of asthma (Martinez 1999). Recent case–control and cohort studies have found an increased risk of asthma with early-life exposure to local residential traffic-related pollutants (Brauer et al. 2002; Zmirou et al. 2004). In addition, several recent studies suggest that early-life (especially *in utero*) exposure to tobacco smoke, which like fresh vehicular exhaust is a complex mixture of air pollutants, is more strongly associated with increased risk of subsequent asthma than is exposure later in childhood (Gilliland et al. 2001, 2002). The larger effect of proximity to a major roadway among girls in our study also is consistent with previous reports (Oosterlee et al. 1996; Pershagen et al. 1995; Shima et al. 2003; van Vliet et al. 1997; Venn et al. 2001).

We previously found that children with an increased risk of incident asthma associated with exercise in high-ozone environments were less likely to have a parental history of

Table 4. Association of asthma and wheeze with distance to a major road among long term residents, by child's history of allergy [OR (95% CI)].[a]

Major road distance (m)	No allergic symptoms (n = 942)	Allergic symptoms (n = 723)
Lifetime asthma[b]		
> 300	1.00	1.00
150–300	0.92 (0.43–1.97)	0.87 (0.53–1.41)
75–150	1.04 (0.41–2.62)	0.96 (0.57–1.61)
< 75	2.27 (1.04–4.94)*	1.31 (0.76–2.25)
Prevalent asthma		
> 300	1.00	1.00
150–300	0.98 (0.42–2.26)	0.77 (0.46–1.27)
75–150	0.81 (0.25–2.55)	1.01 (0.60–1.69)
< 75	2.52 (1.07–5.93)*	1.29 (0.76–2.21)
Current wheeze		
> 300	1.00	1.00
150–300	1.50 (0.72–3.12)	0.80 (0.50–1.28)
75–150	0.72 (0.23–2.25)	1.03 (0.63–1.68)
< 75	2.58 (1.14–5.86)*	1.25 (0.75–2.07)

[a]Adjusted for age, sex, language of questionnaire, community, and race. [b]Participants from Lake Arrowhead were excluded from models for stratum without allergy for prevalent and lifetime asthma, because otherwise the models failed to converge. *$p < 0.05$.

Table 5. Association of asthma and wheeze with distance to a major road among long term residents, by child's sex [OR (95% CI)].[a]

Major road distance (m)	Boys (n = 945)	Girls (n = 901)
Lifetime asthma[b]		
> 300	1.00	1.00
150–300	0.87 (0.54–1.40)	0.88 (0.48–1.61)
75–150	1.15 (0.69–1.92)	0.68 (0.31–1.48)
< 75	0.94 (0.54–1.64)	2.51 (1.39–4.54)**
Prevalent asthma		
> 300	1.00	1.00
150–300	0.77 (0.46–1.30)	0.90 (0.50–1.61)
75–150	1.37 (0.82–2.31)	0.53 (0.23–1.24)
< 75	1.31 (0.75–2.29)	2.13 (1.18–3.85)*
Current wheeze		
> 300	1.00	1.00
150–300	0.96 (0.60–1.53)	0.99 (0.58–1.69)
75–150	1.27 (0.77–2.10)	0.72 (0.35–1.46)
< 75	1.41 (0.84–2.37)	1.95 (1.11–3.41)*

[a]Adjusted for age, language of questionnaire, community, and race. [b]Participants from Lake Arrowhead were excluded from model for stratum with girls for lifetime asthma, because otherwise the model failed to converge. *$p < 0.05$; **$p < 0.01$.

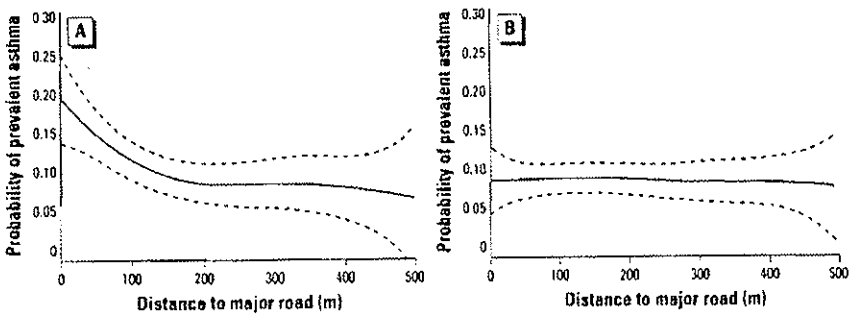

Figure 2. Prevalence of asthma by distance of residence to a major road within 500 m, among long-term (*A*) and short-term (*B*) residents with no family history of asthma. Dotted lines indicate 95% confidence interval.

asthma (McConnell et al. 2002), and another recent study found that the risk of traffic-associated prevalent asthma was larger in children without parental history (Gordian et al. 2005). However, both family history of asthma and child allergy are strong risk factors for asthma independent of exposure to air pollution (London et al. 2001; Peden 2000). In our study, among long-term residents living > 300 m from a major road, parental history was associated with a 3.6-fold increased risk of prevalent asthma [95% confidence interval (CI), 2.3–5.8] and child symptoms of allergy with a 6.4-fold increased risk (95% CI, 4.5–9.1). Therefore, one possible explanation for the larger effects of traffic exposure in children without these strong risk factors is that other risks, for example, dietary factors, indoor allergens, or other environmental exposures, produced asthma in the high-risk group, regardless of traffic-related exposures. It is possible that, among those with parental asthma or allergic symptoms, there was no additional risk of childhood asthma associated with traffic or that any small additional effect of traffic was undetectable in the high background rate of asthma in these children.

Parental history of asthma is an indication of genetic susceptibility, so the absence of risk among those with parental history may also indicate that asthma caused by pollutants in fresh traffic exhaust is less likely to be inherited, or at least is not mediated through the same genetic pathways that account for asthma in the parents of these children. Nonallergic asthma is one possible alternative pathway, which may be consistent with the stronger observed effect of traffic among children without hay fever or other allergic symptoms. Like parental history of asthma, allergic symptoms are associated with atopic asthma (Peden 2000). Atopy is characterized by a positive skin test or immunoglobulin E–specific response to environmental allergens. Recent studies indicate that nonallergic asthma (without airway eosinophilia or atopy) may account for as much as half of all asthma (Beasley et al. 2001; Douwes et al. 2002; Pearce et al. 1999), and it has been suggested that risk factors for this asthma phenotype, including particulate air pollution, may differ from those for allergic asthma (Douwes et al. 2002). Some studies of the risk of asthma and wheeze due to second-hand smoke, another mix of oxidant pollutants, have shown stronger effects among children without atopy or atopic symptoms (Kershaw 1987; Palmieri et al. 1990; Strachan and Cook 1998; Strachan et al. 1996a, 1996b). In addition, drug-induced and occupational asthma commonly occur in the absence of atopy, and many of the exposures responsible for "irritant-induced asthma" in the workplace are also present in the general population (Gautrin et al. 2003; Kitani et al. 1993). However, in other studies, stronger associations of asthma and wheeze with traffic-related pollutants were found among atopic children (Janssen et al. 2003; Zmirou et al. 2004) and with second-hand tobacco smoke exposure among children with an atopic parent (Jaakkola et al. 2001). In addition, laboratory evidence suggests that exposure to oxidant air pollution promotes the effect of allergens on asthma severity and on the pathogenesis of asthma (Jenkins et al. 1999; Kehrl et al. 1999; Li et al. 2003; Schelegle et al. 2003). Based on these studies, an effect of traffic-related pollutants might have been expected to be stronger among children with allergy. Further investigation is warranted to identify the reason for the apparent susceptibility of children without allergy and parental history of asthma in our study. Better phenotypic characterization of atopy both in the study children and in their parents and of allergen exposure in children would be useful to interpret the relationship of these characteristics to traffic and asthma.

In a previous cohort in the Children's Health Study, we observed strong associations of lifetime asthma with residential ambient NO_2, an indicator of variability within communities of traffic-related pollutants, which was measured at a sample of homes (Gauderman et al. 2005). Measured NO_2 was moderately correlated with total traffic-modeled pollution ($R = 0.59$). Strong associations also were observed with residential distance to a freeway and with traffic-modeled exposure from freeways (but not from non-freeway traffic–modeled pollution). We have now extended these observations to a larger population and to residential distance to other major roadways. The association of asthma in our new cohort with non-freeway traffic–modeled exposure, but not with freeway-modeled exposure, may reflect differences in the distribution of freeways and major roads around homes in the different cohorts. The association of asthma with non-freeway traffic–modeled exposure is consistent with the observed association with distance to a major road, because there were few children within 75 m of a freeway in our study. Residential distance to a major roadway also is computationally easier to estimate from data that are more readily available than the meteorologic and traffic volume data required to model exposure. An increased risk associated with proximity to a major roadway also is more easily explained to policy makers and to the general public than is the risk associated with traffic-modeled exposure.

Our results are also consistent with several European studies that found increased risks of childhood asthma with increased traffic counts in close proximity to the home (Morris et al. 2000; Nicolai et al. 2003; van Vliet et al. 1997; Venn et al. 2001; Zmirou et al. 2004). One large British study that focused on traffic within 150 m of children's homes found a gradient in risk that increased markedly with decreasing residential distance to a main road (Venn et al. 2001). There have been few other studies of traffic and childhood asthma in the United States. A recent study in northern California found an association between measured traffic-related pollutants at schools and childhood asthma (Kim et al. 2004). However, another large study in southern California based on records of children covered by Medicaid (public insurance for low-income persons) found no association between asthma prevalence and traffic counts within 168 m of the home, although an association with asthma medication was observed (English et al. 1999). Some of the inconsistencies in the literature could perhaps be explained by the failure of many studies to account for the pattern of effect modification by parental history of asthma and by age and duration of residential exposure to traffic-related pollutants that vary markedly at different locations. The larger effects of traffic in girls has been observed in previous studies of traffic and asthma and related symptoms, but the reason for the apparent susceptibility of girls is not known (Oosterlee et al. 1996; Pershagen et al. 1995; Shima et al. 2003; van Vliet et al. 1997; Venn et al. 2001).

A causal relationship between asthma and traffic-related exposures is biologically plausible, because ambient particulate matter and other oxidant pollutants have been shown to elicit responses relevant to the pathogenesis of asthma (Li et al. 2003). In addition, studies in southern California and elsewhere have shown that the largest gradients in traffic-related pollutants occur within the 150–200 m from roadways over which we saw decreasing risk of asthma (Gilbert et al. 2003; Zhu et al. 2002). In studies in which NO_2 and other markers of traffic-related exposure have been measured in close proximity to major roadways, variability has usually been best explained by traffic volume within 300 m (Briggs et al. 2000; Gilbert et al. 2003; Ross et al. 2005), although weaker correlations have also been observed over longer distances from the highest volume traffic corridors (Gauderman et al. 2005; Gilbert et al. 2003, 2005; Ross et al. 2005).

We considered bias as an explanation for our results. Parents with asthma who were susceptible to environmental triggers might have selected homes away from major roads, perhaps even before the children were born. If the children of these parents had high rates of asthma, this might have explained the observed lack of effect of a major road in families with parental asthma. There is some

evidence that parents may intervene to reduce household exposure to indoor allergens, another perceived risk for asthma and asthma severity (Almqvist et al. 2003; van Strien et al. 2002). However, this bias is unlikely to explain our results, because we examined and found no significant differences in rates of parental history of asthma by exposure to a major road (data not shown). Selection bias related to factors influencing participation could not be evaluated, because characteristics of nonparticipants are not known. However, there were some modest differences between participants whose addresses could be geocoded, who were of higher socioeconomic status than were participants whose addresses could not be geocoded. For example, of those with family income < $7,500, 85% could be geocoded, compared with 93% of those with ≥ $100,000. Of those without insurance, 85% could be geocoded, compared with 90% of those with insurance. The differences between those whose homes could and could not be geocoded were heavily influenced by 299 subjects (of 579 total that could not be geocoded) who completed a questionnaire but did not provide an address. However, none of the three asthma outcomes was associated with absence of a home geocode, and the associations of asthma with traffic were robust to our adjustment for socioeconomic status. It has also been suggested that traffic-related noise might cause asthma through a pathway mediated by stress (Ising and Ising 2002). However, to date there is little evidence to support this hypothesis. Other potential confounders, including sociodemographic factors, second-hand or *in utero* tobacco smoke exposure, or housing characteristics that are commonly associated with asthma also did not explain our results. A final possible limitation to the interpretation of these results is the assessment of asthma by questionnaire. However, self-report of physician-diagnosed asthma has been reported to accurately reflect what physicians have told the patient, at least in adults, and validity of questionnaires as reported by repeatability of response is good (Ehrlich et al. 1995). For these reasons, self-report of physician-diagnosed asthma has been widely used in epidemiologic studies and has been recommended as the preferred outcome assessment for use in large population-based studies, because a more precise diagnosis is not available (Burr 1992). In addition, the consistency of associations with lifetime asthma, prevalent asthma based on a combination of symptoms reporting and doctor diagnosis, and recent wheezing suggests that diagnostic bias is unlikely to have explained the observed results.

We conclude that living in a residence with more nearby traffic increases the risk of childhood asthma. Children with no parental history of asthma who had long-term residential exposure (or early-life exposure) constituted a susceptible population, and the risk was larger for girls than for boys. Because a substantial number of southern California children live near a major road, this exposure is potentially an important public health problem that could be remediable by transportation and residential development policy and by more effective control of vehicular emissions. Among those long-term residents with no parental history of asthma who lived within 75 m of a major road, 59% of asthma was attributable to residential proximity to the road. Further investigation is warranted to understand why the absence of parental asthma history increased susceptibility to traffic-related exposure.

References

Almqvist C, Egmar AC, van Hage-Hamsten M, Berglind N, Pershagen G, Nordvall SL, et al. 2003. Heredity, pet ownership, and confounding control in a population-based birth cohort. J Allergy Clin Immunol 111(4):800–806.

Beasley R, Pekkanen J, Pearce N. 2001. Has the role of atopy in the development of asthma been over-emphasized? Pediatr Pulmonol 23(suppl):149–150.

Brauer M, Hoek G, Van Vliet P, Meliefste K, Fischer PH, Wijga A, et al. 2002. Air pollution from traffic and the development of respiratory infections and asthmatic and allergic symptoms in children. Am J Respir Crit Care Med 166(8):1092–1098.

Briggs DJ, de Hoogh C, Gulliver J, Wills J, Elliott P, Kingham S, et al. 2000. A regression-based method for mapping traffic-related air pollution: application and testing in four contrasting urban environments. Sci Total Environ 253(1–3):151–167.

Burr ML. 1992. Diagnosing asthma by questionnaire in epidemiological surveys (editorial). Clin Exp Allergy 22(5):509–510.

Douwes J, Gibson P, Pekkanen J, Pearce N. 2002. Non-eosinophilic asthma: importance and possible mechanisms. Thorax 57(7):643–648.

Ehrlich RI, Du Toit D, Jordaan E, Volmink JA, Weinberg EG, Zwarenstein M. 1995. Prevalence and reliability of asthma symptoms in primary school children in Cape Town. Int J Epidemiol 24(6):1139–1145.

English P, Neutra R, Scalf R, Sullivan M, Waller L, Zhu L. 1999. Examining associations between childhood asthma and traffic flow using a geographic information system. Environ Health Perspect 107:761–767.

Gauderman WJ, Avol E, Lurmann F, Kuenzli N, Gilliland F, Peters J, et al. 2005. Childhood asthma and exposure to traffic and nitrogen dioxide. Epidemiology 16(6):737–743.

Gautrin D, Newman-Taylor AJ, Nordman H, Malo JL. 2003. Controversies in epidemiology of occupational asthma. Eur Respir J 22(3):551–559.

Gilbert NL, Goldberg MS, Beckerman B, Brook JR, Jerrett M. 2005. Assessing spatial variability of ambient nitrogen dioxide in Montreal, Canada, with a land-use regression model. J Air Waste Manag Assoc 55(8):1059–1063.

Gilbert NL, Woodhouse S, Stieb DM, Brook JR. 2003. Ambient nitrogen dioxide and distance from a major highway. Sci Total Environ 312(1–3):43–46.

Gilliland FD, Li YF, Dubeau L, Berhane K, Avol E, McConnell R, et al. 2002. Effects of glutathione *S*-transferase M1, maternal smoking during pregnancy, and environmental tobacco smoke on asthma and wheezing in children. Am J Respir Crit Care Med 166(4):457–463.

Gilliland FD, Li YF, Peters JM. 2001. Effects of maternal smoking during pregnancy and environmental tobacco smoke on asthma and wheezing in children. Am J Respir Crit Care Med 163(2):429–436.

Gordian ME, Haneuse S, Wakefield J. 2005. An investigation of the association between traffic exposure and the diagnosis of asthma in children. J Expo Anal Environ Epidemiol doi:10.1038/sj.jea.7500436 [Online 29 June 2005].

Hastie TJ, Tibshirani RJ. 1990. Generalized Additive Models. London:Chapman & Hall.

ISAAC Steering Committee. 1998. International Study of Asthma and Allergies in Children: Phase II Modules. Muenster, Germany:Institute of Epidemiology and Social Medicine, University of Muenster.

Ising H, Ising M. 2002. Chronic cortisol increases in the first half of the night caused by road traffic noise. Noise Health 4(16):13–21.

Jaakkola JJ, Nafstad P, Magnus P. 2001. Environmental tobacco smoke, parental atopy, and childhood asthma. Environ Health Perspect 109:579–582.

Janssen NA, Brunekreef B, van Vliet P, Aarts F, Meliefste K, Harssema H, et al. 2003. The relationship between air pollution from heavy traffic and allergic sensitization, bronchial hyperresponsiveness, and respiratory symptoms in Dutch schoolchildren. Environ Health Perspect 111:1512–1518.

Jenkins HS, Devalia JL, Mister RL, Bevan AM, Rusznak C, Davies RJ. 1999. The effect of exposure to ozone and nitrogen dioxide on the airway response of atopic asthmatics to inhaled allergen: dose- and time-dependent effects. Am J Respir Crit Care Med 160(1):33–39.

Kehrl HR, Peden DB, Ball B, Folinsbee LJ, Horstman D. 1999. Increased specific airway reactivity of persons with mild allergic asthma after 7.6 hours of exposure to 0.16 ppm ozone. J Allergy Clin Immunol 104(6):1198–1204.

Kershaw CR. 1987. Passive smoking, potential atopy and asthma in the first five years. J R Soc Med 80(11):683–688.

Kim JJ, Smorodinsky S, Lipsett M, Singer BC, Hodgson AT, Ostro B. 2004. Traffic-related air pollution near busy roads: the East Bay Children's Respiratory Health Study. Am J Respir Crit Care Med 170(5):520–526.

Kitani H, Kajimoto K, Sugimoto K, Mifune T, Mitsunobu F, Yokota S, et al. 1993. IgE-mediated allergic reaction in drug-induced asthma. Acta Med Okayama 47(5):317–321.

Künzli N, McConnell R, Bates D, Bastain T, Hricko A, Lurmann F, et al. 2003. Breathless in Los Angeles: the exhausting search for clean air. Am J Public Health 93(9):1494–1499.

Li N, Hao M, Phalen RF, Hinds WC, Nel AE. 2003. Particulate air pollutants and asthma. A paradigm for the role of oxidative stress in PM-induced adverse health effects. Clin Immunol 109(3):250–265.

London SJ, Gauderman WJ, Avol E, Rappaport EB, Peters JM. 2001. Family history and the risk of early-onset persistent, early-onset transient, and late-onset asthma. Epidemiology 12(5):577–583.

Martinez FD. 1999. Maturation of immune responses at the beginning of asthma. J Allergy Clin Immunol 103(3 pt 1):355–361.

McConnell R, Berhane K, Gilliland F, London SJ, Islam T, Gauderman WJ, et al. 2002. Asthma in exercising children exposed to ozone: a cohort study. Lancet 359(9304):386–391.

Morris SE, Sale RC, Wakefield JC, Falconer S, Elliott P, Boucher BJ. 2000. Hospital admissions for asthma and chronic obstructive airways disease in east London hospitals and proximity of residence to main roads. J Epidemiol Community Health 54(1):75–76.

Nicolai T, Carr D, Weiland SK, Duhme H, von Ehrenstein O, Wagner C, et al. 2003. Urban traffic and pollutant exposure related to respiratory outcomes and atopy in a large sample of children. Eur Respir J 21(6):956–963.

Oosterlee A, Drijver M, Lebret E, Brunekreef B. 1996. Chronic respiratory symptoms in children and adults living along streets with high traffic density. Occup Environ Med 53(4):241–247.

Palmieri M, Longobardi G, Napolitano G, Simonetti DM. 1999. Parental smoking and asthma in childhood. Eur J Pediatr 149(10):738–740.

Pearce N, Pekkanen J, Beasley R. 1999. How much asthma is really attributable to atopy? Thorax 54(3):268–272.

Peden DB. 2000. Development of atopy and asthma: candidate environmental influences and important periods of exposure. Environ Health Perspect 108(suppl 3):475–482.

Pershagen G, Rylander E, Norberg S, Eriksson M, Nordvall SL. 1995. Air pollution involving nitrogen dioxide exposure and wheezing bronchitis in children. Int J Epidemiol 24(6):1147–1153.

Ross Z, English PB, Scalf R, Gunier R, Smorodinsky S, Wall S, et al. 2006. Nitrogen dioxide prediction in southern California using land use regression modeling: potential for environmental health analyses. J Expo Sci Environ Epidemiol 16(2):106–114.

Schelegle ES, Miller LA, Gershwin LJ, Fanucchi MV, Van Winkle LS, Gerriets JE, et al. 2003. Repeated episodes of ozone inhalation amplifies the effects of allergen sensitization and inhalation on airway immune and structural development in rhesus monkeys. Toxicol Appl Pharmacol 191(1):74–85.

Shima M, Nitta Y, Adachi M. 2003. Traffic-related air pollution and respiratory symptoms in children living along trunk roads in Chiba Prefecture, Japan. J Epidemiol 13(2):108–119.

Strachan DP, Butland BK, Anderson HR. 1996a. Incidence and prognosis of asthma and wheezing illness from early childhood to age 33 in a national British cohort. BMJ 312(7040):1195–1199.

Strachan DP, Cook DG. 1998. Health effects of passive smoking. 6. Parental smoking and childhood asthma: longitudinal and case-control studies. Thorax 53(3):204–212.

Strachan DP, Griffiths JM, Johnston ID, Anderson HR. 1996b. Ventilatory function in British adults after asthma or wheezing illness at ages 0–35. Am J Respir Crit Care Med 154(6 pt 1):1629–1635.

van Strien RT, Koopman LP, Kerkhof M, Spithoven J, de Jongste JC, Gerritsen J, et al. 2002. Mite and pet allergen levels in homes of children born to allergic and nonallergic parents: the PIAMA study. Environ Health Perspect 110:A693–A698.

van Vliet P, Knape M, de Hartog J, Janssen N, Harssema H, Brunekreef B. 1997. Motor vehicle exhaust and chronic respiratory symptoms in children living near freeways. Environ Res 74(2):122–132.

Venables WN, Ripley BD, Ripley BD. 2002. Modern Applied Statistics with S-Plus. New York:Springer Verlag.

Venn A, Lewis S, Cooper M, Hubbard R, Hill I, Boddy R, et al. 2000. Local road traffic activity and the prevalence, severity, and persistence of wheeze in school children: combined cross sectional and longitudinal study. Occup Environ Med 57(3):152–158.

Venn AJ, Lewis SA, Cooper M, Hubbard R, Britton J. 2001. Living near a main road and the risk of wheezing illness in children. Am J Respir Crit Care Med 164(12):2177–2180.

Waldron G, Pottle B, Dod J. 1995. Asthma and the motorways—one district's experience. J Public Health Med 17(1):85–89.

Wjst M, Reitmeir P, Dold S, Wulff A, Nicolai T, von Loeffelholz-Colberg EF, et al. 1993. Road traffic and adverse effects on respiratory health in children. BMJ 307(6904):596–600.

Zhu Y, Hinds WC, Kim S, Sioutas C. 2002. Concentration and size distribution of ultrafine particles near a major highway. J Air Waste Manag Assoc 52(9):1032–1042.

Zmirou D, Gauvin S, Pin I, Momas I, Sahraoui F, Just J, et al. 2004. Traffic related air pollution and incidence of childhood asthma: results of the Vesta case-control study. J Epidemiol Community Health 58(1):18–23.

Effect of exposure to traffic on lung development from 10 to 18 years of age: a cohort study

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Summary

Background Whether local exposure to major roadways adversely affects lung-function growth during the period of rapid lung development that takes place between 10 and 18 years of age is unknown. This study investigated the association between residential exposure to traffic and 8-year lung-function growth.

Methods In this prospective study, 3677 children (mean age 10 years [SD 0·44]) participated from 12 southern California communities that represent a wide range in regional air quality. Children were followed up for 8 years, with yearly lung-function measurements recorded. For each child, we identified several indicators of residential exposure to traffic from large roads. Regression analysis was used to establish whether 8-year growth in lung function was associated with local traffic exposure, and whether local traffic effects were independent of regional air quality.

Findings Children who lived within 500 m of a freeway (motorway) had substantial deficits in 8-year growth of forced expiratory volume in 1 s (FEV_1, −81 mL, p=0·01 [95% CI -143 to -18]) and maximum midexpiratory flow rate (MMEF, −127 mL/s, p=0·03 [-243 to -11]), compared with children who lived at least 1500 m from a freeway. Joint models showed that both local exposure to freeways and regional air pollution had detrimental, and independent, effects on lung-function growth. Pronounced deficits in attained lung function at age 18 years were recorded for those living within 500 m of a freeway, with mean percent-predicted 97·0% for FEV_1 (p=0·013, relative to >1500m [95% CI 94·6–99·4) and 93·4% for MMEF (p=0·006 [95% CI 89·1–97.7]).

Interpretation Local exposure to traffic on a freeway has adverse effects on children's lung development, which are independent of regional air quality, and which could result in important deficits in attained lung function in later life.

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Introduction

Both cross-sectional[1–9] and longitudinal[10–15] studies have shown that lung function in children is adversely affected by exposure to urban, regional air pollution. Evidence has emerged that local exposure to traffic is related to adverse respiratory effects in children, including increased rates of asthma and other respiratory diseases.[16–28] Cross-sectional studies in Europe have shown that deficits in lung function are related to residential exposure to traffic.[2,7,29–32] However, does traffic exposure have an adverse effect on lung-function development in children? The answer to this question is important in view of the extent of traffic exposure in urban environments and the established relation between diminished lung function in adulthood and morbidity and mortality.[33–39]

We investigated the association between residential exposure to traffic and 8-year lung-function development on the basis of cohort data from the Children's Health Study. We also studied the joint effects of local traffic exposure and regional air quality on children's lung development.

Methods

Participants

The Children's Health Study recruited two cohorts of fourth-grade children (mean age 10 years [SD 0·44], one in 1993 (cohort 1, n=1718) and the other in 1996 (cohort 2, n=1959). All children were recruited from schools in 12 southern California communities as part of an investigation into the long-term effects of air pollution on children's respiratory health.[2,14,40] A consistent protocol was used in all communities to identify schools, and all students targeted for study were invited to participate.[40] Overall, 82% (3677) of available students agreed to participate. Pulmonary-function data were obtained yearly by trained field technicians, who travelled to study schools to undertake maximum effort spirometry on the children, using the same equipment and testing protocol used throughout the study period. Details of the testing protocol have been previously reported.[2,15] Children in both cohorts were followed up for 8 years.

A baseline questionnaire, completed at study entry by each child's parent or legal guardian, was used to obtain information on race, Hispanic ethnic origin, parental income and education, history of doctor-diagnosed asthma, in-utero exposure to maternal smoking, and household exposure to gas stoves, pets, and environmental tobacco smoke.[40] A yearly questionnaire, with similar structure to that of the baseline questionnaire, was used to update information on asthma status, personal smoking, and exposure to environmental tobacco smoke. For statistical modelling, a three-category socioeconomic status variable was created on the basis of total household income and education of the parent or guardian that completed the questionnaire. High socioeconomic status (23% of children, n=823) was defined as a parental

income greater than US$100 000 per year, or an income over US$15 000 per year and at least 4 years of college education. The middle category (36%, n=1283) included children with a parental income between US$15 000 and US$100 000 and some (less than 4 years) college or technical school education, and low socioeconomic status (41%, n=1483) included all remaining children.

The study protocol was approved by the institutional review board for human studies at the University of Southern California, and written consent was provided by a parent or legal guardian for every study participant.

Exposure Data

We characterised exposure of every study participant to traffic-related pollutants by two types of measures—proximity of the child's residence to the nearest freeway or to the nearest major non-freeway road, and model-based estimates of traffic-related air pollution at the residence, derived from dispersion models that incorporated distance to roadways, vehicle counts, vehicle emission rates, and meteorological conditions.[9] Regional air pollution was continuously monitored at one central site location within each study community over the course of the investigation. Further details of exposure assessment are available in the webappendix.

See Online for webappendix

Statistical methods

The outcome data consisted of 22 686 pulmonary-function tests recorded from 3677 participants during 8 years in both cohorts. We focused on three pulmonary-function measures: forced vital capacity (FVC), forced expiratory volume in 1 s (FEV_1), and maximum midexpiratory flow rate (MMEF, also known as FEF_{25-75}). The exposures of primary interest were the traffic measures described above.

We used a hierarchical mixed-effects model to relate 8-year growth in each lung-function measure to traffic exposure, with basic structure that has been previously described.[9] To account for the growth pattern in lung function during this period, we used a linear spline model,[10] constructed so that 8-year growth in lung function was estimated jointly with other model parameters. We estimated and tested the effect of traffic exposure on 8-year growth, and in some analyses on mean values at 10 and 18 years of age. The model allowed for separate growth curves for each sex, race, ethnic origin, cohort, and baseline-asthma subgroup. The model also included adjustments for height, height squared, body-mass index (BMI), BMI squared, present asthma status, exercise or respiratory illness on the day of the test, any tobacco smoking by the child in the previous year, and indicator variables for field technician. Random effects for the intercept and 8-year growth parameters were included at the level of participant and community.

To keep the potential effect of outliers to a minimum and to examine possible non-linear exposure-response relations, we used categorical forms of each traffic indicator in our models. For distance to the freeway, we formed four categories—less than 500 m, 500–1000 m, 1000–1500 m, and more than 1500 m. Distances to non-freeway major roads were similarly categorised based on distances of 75 m, 150 m, and 300 m. Model-based estimates of pollution from freeways and non-freeways were categorised into quartiles on the basis of their respective distributions (see webappendix). The categorisation distances for all traffic indicators were fixed before any health analyses were done. Traffic effects are reported as the difference in 8-year growth for each category relative to the least exposed category, so that negative estimates signify reduced lung-function growth or values with increased exposure.

We also considered joint estimation of traffic effects within the community and pollution between communities, which was based on the long-term average pollutant concentrations measured at the central sites (see webappendix). Pollutant effects are reported as the difference in 8-year growth in lung function from the least to the most polluted community, with negative differences indicating growth deficits with increased exposure. Possible modification of a traffic effect by community-average ambient pollutant concentration was tested by inclusion of the appropriate interaction term in the model.

To examine attained lung function, we computed percent-predicted lung function for participants who were measured in 12th grade, our last year of follow-up (n=1497, mean age 17·9 years, [SD=0·41]). To estimate predicted FEV_1 values, we first fitted a regression model for observed FEV_1 (log transformed) with predictors log height, BMI, BMI squared, sex, asthma status, race or ethnic origin, field technician, and sex-by-log height, sex-by-BMI, sex-by-BMI squared, sex-by-asthma, and sex-by-race or ethnic origin interactions. We calculated predicted FEV_1 on the basis of this model and percent-predicted as observed divided by predicted FEV_1. We used a regression model to calculate the mean percent-predicted value for each category of distance to the freeway, with adjustment for community. To aid in interpretation, we scaled percent-predicted values so that children who lived furthest (>1500 m) from a freeway had a mean of 100%, and we give means for the remaining distance groups relative to this benchmark. Analogous calculations were used to obtain the percent-predicted mean for FVC and MMEF.

Regression procedures in SAS (version 9·0) were used to fit all models. Associations denoted as significant were those with a p value less than 0·05, assuming a two-sided alternative hypothesis.

Role of the funding source

The funding sources of this study had no role in the study design, collection, analysis, or interpretation of data, in the writing of the report, or in the decision to submit the paper for publication. The corresponding

author had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Results

An average of 6·2 pulmonary function tests were done per child. There were equal proportions of male and female participants (webtable 1). Most children were of non-Hispanic white or Hispanic ethnic origin. 440 (12%) children lived within 500 m of a freeway, with most of these children residing in six of the 12 communities (webtable 2 and webfigure). Model-based estimates of pollution from a freeway were skewed toward either high or low values within most study communities.

8-year growth in FVC, FEV_1, and MMEF averaged 1512 mL, 1316 mL, and 1402 mL/s, respectively, in girls, and 2808 ml, 2406 ml, and 2476 ml/s, respectively, in boys. Closer residential distance to a freeway was associated with reduced growth in lung function (table 1). In children who lived within 500 m of a freeway, 8-year growth was significantly reduced compared with those who lived at least 1500 m from a freeway. Large deficits in FEV_1 and MMEF growth were also estimated for the two highest-exposure quartiles of model-based pollution from a freeway, although neither deficit was statistically significant. Indicators of traffic from non-freeway roads, including both distance and model-based pollution estimates, were not associated with reduced growth.

The association between FEV_1 growth and distance to a freeway was significant in various sensitivity analyses (table 2). Compared with the results shown in table 1 (base model), distance-effect estimates were larger with additional adjustment for socio-economic status. Further investigation showed that low socioeconomic status was associated with increased traffic exposure, with mean residential distance to freeways of 1·8 km (SD 1·32), 2·0 km (1·65), and 2·5 km (1·91) for low, middle, and high groups respectively. However, socioeconomic status was not significantly associated with FEV_1 growth, and therefore adjustment for this variable induced only a modest change. Adjustment for indoor sources of air pollution including gas stoves, pets, and exposure to environmental tobacco smoke also resulted in little change in the estimated freeway-distance effects.

Significant distance effects were seen in the subset of children who reported never having had asthma, and in the subset of children who reported no active tobacco smoking. The relation between FEV_1 growth and distance was noticeably larger in boys than in girls, although a test of effect modification by sex was non-significant (p=0·10). Only six of the 12 communities had substantial numbers of children living within 500 m of a freeway. The estimated effects of freeway distance on lung development were more pronounced in these six higher-traffic communities than in the other communities. There was no significant evidence of heterogeneity in the local distance effects between these six communities (data not shown).

	FVC (mL) difference (95% CI)	FEV1 (mL) difference (95% CI)	MMEF (mL/sec) difference (95% CI)
Freeway distance*			
<500 m	−63 (−131 to 5)	−81 (−143 to −18)	−127 (−243 to −11)
500–1000 m	−31 (−93 to 32)	−41 (−99 to 17)	−35 (−142 to 73)
1000–1500 m	−19 (−84 to 46)	−33 (−93 to 26)	−94 (−204 to 16)
Model-based pollution from freeway†			
4th quartile (high)	−66 (−186 to 54)	−69 (−179 to 42)	−147 (−352 to 58)
3rd quartile	−61 (−151 to 29)	−78 (−161 to 5)	−144 (−298 to 9)
2nd quartile	−27 (−90 to 36)	−22 (−80 to 36)	−37 (−144 to 71)
Non-freeway distance‡			
<75 m	5 (−63 to 72)	−35 (−97 to 27)	−66 (−181 to 49)
75–150 m	4 (−59 to 68)	22 (−37 to 80)	35 (−74 to 144)
150–300 m	−10 (−63 to 42)	−8 (−56 to 40)	−16 (−105 to 73)
Model-based pollution from non-freeway†			
4th quartile (high)	13 (−70 to 96)	3 (−74 to 80)	2 (−140 to 144)
3rd quartile	42 (−27 to 111)	16 (−47 to 80)	−23 (−141 to 95)
2nd quartile	6 (−54 to 66)	2 (−53 to 57)	11 (−91 to 113)

*Difference in 8-year lung-function growth relative to children living at least 1500 m from a freeway. †Difference in 8-year lung-function growth relative to children in the first (lowest) quartile of exposure. ‡Difference in 8-year lung-function growth relative to children living at least 300 m from a non-freeway road.

Table 1: **Association between 8-year lung-function growth and several indicators of residential traffic exposure**

	Freeway Distance (m)					
	<500	p	500–1000	p	1000–1500	p
Base model*	−81	0·012	−41	0·165	−33	0·275
Additional covariates						
Base+socioeconomic status	−92	0·005	−50	0·092	−37	0·228
Base+gas stove in the home	−86	0·008	−42	0·160	−33	0·281
Base+pets in the home	−80	0·013	−41	0·165	−33	0·275
Base+in-utero exposure to maternal smoking	−83	0·011	−33	0·269	−36	0·245
Base+second-hand smoke exposure	−86	0·008	−41	0·163	−37	0·230
Subgroups						
Non-asthmatics only	−83	0·025	−70	0·042	−61	0·091
Non-smokers only	−99	0·006	−49	0·154	−48	0·182
Boys only	−158	0·003	−54	0·264	−77	0·123
Girls only	−12	0·750	−39	0·254	3	0·932
Six communities with closest freeway proximity†	−105	0·003	−56	0·101	−40	0·260
Deleting observations after a residence change‡	−86	0·030	−73	0·042	−53	0·148

*Base model results are the same as those in table 1. All models include adjustment for the covariates listed in the Methods section. Values are the difference in 8-year FEV_1 growth relative to those living >1500 m from a freeway. †Including only children from the six communities with the largest number of children living near a freeway (Riverside, Atascadero, Alpine, San Dimas, Long Beach, and Santa Maria). ‡Censoring any pulmonary function tests recorded after a participant left his or her baseline address.

Table 2: **Sensitivity analysis of freeway-distance effects on 8-year FEV_1 growth**

Furthermore, around 34% (1267) of children moved from their baseline residence during follow-up but remained in one of the 12 study communities and thus continued to participate. If we omitted post-move lung-function measurements from the analysis, the estimated effects of freeway-distance on FEV_1 growth were more pronounced.

See Online for webtables 1 and 2 and webfigure

	Regional pollutant effect*	p	Local freeway distance (m)						
			<500	p	500–1000	p	1000–1500	p	p for interaction†
1000–1800 ozone	−13	0·821	−81	0·012	−41	0·165	−33	0·275	0·51
Nitrogen dioxide	−109	0·003	−80	0·012	−41	0·166	−33	0·279	0·81
Acid	−111	0·002	−80	0·013	−41	0·164	−33	0·285	0·54
PM_{10}	−111	0·013	−81	0·012	−42	0·158	−32	0·287	0·74
$PM_{2.5}$	−110	0·009	−80	0·012	−41	0·160	−33	0·285	0·40
Elemental carbon	−101	0·001	−80	0·012	−42	0·156	−33	0·282	0·63

*Pollutant effects are the difference in 8-year FEV, growth from lowest to highest observed community-average concentration of the pollutant, specifically: per increase of 37·5 ppb ozone (1000–1800), 34·6 ppb of nitrogen dioxide, 9·6 ppb of acid vapour, 51·4 μg/m³ of PM10, 22·8 μg/m³ of PM2.5 and 1·2 μg/m³ elemental carbon. Distance effects are the difference in 8-year growth relative to those living >1500 m from a freeway. †A test of whether freeway-distance effect is modified by regional concentration of the pollutant. PM_{10} =particulate matter <10 μm aerodynamic diameter, $PM_{2.5}$ =particulate matter <2·5 μm aerodynamic diameter.

Table 3: Joint effect of regional pollution and local distance to a freeway on 8-year FEV, growth

Reduced lung-function growth was independently associated with both freeway distance and with regional air pollution (table 3). Statistically significant joint models of regional pollution with distance to freeway were seen for nitrogen dioxide , acid vapour, elemental carbon, and particulate matter with aerodynamic diameter less than 10 μm and less than 2·5 μm. Ozone was not associated with reduced lung-function growth. There was no significant evidence of effect modification (interaction) of local traffic effects with any of the regional pollutants.

A subset of 1445 children were observed over the full 8 years of the study, from age 10 to 18 years. In this group, we noted significant deficits in 8-year FEV_1 growth and MMEF growth for those who lived within 500 m of a freeway (table 4). At 10 years of age, there was some evidence of reduced lung function for those who lived closer to a freeway than those who did not, although none of the differences between distance categories was statistically significant. However, by 18 years of age, participants who lived closest to a freeway had substantially lower attained FEV_1 and MMEF than those who lived at least 1500 m from a freeway.

These deficits in average FEV_1 and MMEF translated into pronounced deficits in percent-predicted lung function at 18 years of age (figure). There was a trend of lower percent-predicted lung function for children who lived closer to a freeway than for those who lived further away. The effect was most pronounced for those who lived less than 500 m from a freeway, with average percent predicted values of 97·0% (95% CI 94·6–99·4) for FEV_1 (p=0·013 relative to >1500 m) and 93·4% (89·1–97·7) for MMEF (p=0·006).

		Lung function		8-year growth
		Age 10 years	Age 18 years	Difference* (95% CI)
		Difference* (95% CI)	Difference* (95% CI)	
FVC	Freeway distance			
	<500 m	−17 (−70 to 37)	−85 (−192 to 22)	−69 (−160 to 22)
	500–1,000 m	−12 (−61 to 37)	−54 (−151 to 43)	−42 (−125 to 41)
	1000–1500 m	−30 (−80 to 21)	−81 (−181 to 19)	−52 (−137 to 33)
FEV_1	Freeway distance			
	<500 m	−23 (−73 to 28)	−121 (−219 to −23)	−98 (−182 to −15)
	500–1000 m	−32 (−78 to 14)	−93 (−183 to −4)	−61 (−137 to 15)
	1000–1500 m	−34 (−81 to 14)	−78 (−170 to 14)	−44 (−122 to 34)
MMEF	Freeway distance			
	<500 m	−57 (−169 to 56)	−230 (−432 to −28)	−173 (−327 to −19)
	500–1000 m	−92 (−195 to 10)	−105 (−289 to 79)	−12 (−152 to 128)
	1000–1500 m	−45 (−150 to 60)	−151 (−340 to 38)	−106 (−250 to 38)

*Difference in 8-year lung function or growth relative to children living >1500 m from a freeway.

Table 4: Cumulative effect of residential distance in the 1445 children with full 8-year of follow-up

Discussion

This study shows that residential proximity to freeway traffic is associated with substantial deficits in lung-function development in children. 8-year increases in both FEV_1 and MMEF were smaller for children who lived within 500 m of a freeway, than for those who lived at least 1500 m from a freeway. Freeway effects were seen in subsets of non-asthmatic and non-smoking participants, which is an indication that traffic exposure has adverse effects on otherwise healthy children. Deficits in 8-year growth resulted in lower attained FEV_1 and MMEF at 18 years of age for participants who lived within 500 m of a freeway than for those who lived further away. Since lung development is nearly complete by age 18 years, an individual with a deficit at this time will probably continue to have less than healthy lung function for the remainder of his or her life.

We previously reported an association between community-average pollutant concentrations and 8-year lung-function growth.[9] That result relied on comparisons in communities that had different concentrations of regional air pollution, and implicated many pollutants such as nitrogen dioxide, acid vapour, particulate matter with aerodynamic diameter less than 10 μm and 2·5 μm, and elemental carbon. Our present study builds on that result, and shows that in addition to regional pollution, local exposure to large roadways are associated with diminished lung-function

development in children. We did not find any evidence that traffic effects varied depending on background air quality, which suggests that even in an area with low regional pollution, children living near a major roadway are at increased risk of health effects. Our results also suggest that children who live close to a freeway in a high pollution area experience a combination of adverse developmental effects because of both local and regional pollution.

We noted a larger freeway effect in boys than in girls, although the difference between sexes was not significant. By contrast, a cross-sectional European study[49] reported larger traffic effects on lung function in girls than in boys.[49] Several factors could explain this discrepancy in sex-specific effects between studies, from differences in specific air pollution mixtures and underlying population susceptibilities, to the general difficulty of comparisons between longitudinal and cross-sectional study effect estimates. In general, however, both studies show that lung function in children is adversely affected by exposure to traffic.

The concentrations of several pollutants are raised near major freeways. Daytime concentrations of black carbon, ultrafine particulate, and other exhaust pollutants have been reported to be high, but decline exponentially, within 500 m of a freeway,[44,45] although night-time concentrations of ultrafine particulate remain above background concentrations for distances greater than 500 m from a freeway.[46] Some studies have reported increased traffic pollution, particularly nitrogen dioxide, at distances over 1000 m from a freeway.[6,47–49] Elemental carbon, an indicator of pollution from diesel exhaust, varies with nearby high-traffic roads[6,50,51] but can also be transported across large distances.[52] Diesel exhaust is one of the primary contributors to particulate-matter concentrations in those communities most affected by traffic.[53] A pollutant such as elemental carbon could explain our reported health effects both locally and regionally.

Both regional ambient and ultrafine particulate matter present in high concentration in close proximity to roadways can elicit oxidative and nitrosative stress in the airways, which results in inflammation.[54,55] Kulkarni and co-workers[54] reported that traffic-related particulate matter was correlated with the amount of carbon in the airway macrophages of children, which in turn was associated with reductions in FEV_1, MMEF, and FVC. Chronic airway inflammation could produce our reported deficits in increased MMEF and FEV_1. Additional research is needed to identify the specific traffic pollutants that bring about health effects, and to elucidate the contribution of each pollutant to regional and local associations.

A strength of this study was the long-term, prospective follow-up of two large cohorts of children, with exposure and outcome data obtained consistently. However, as in any epidemiological study, our results could be confounded by one or more other factors related to both traffic and lung-function growth. Our results were robust to adjustment for several factors, including socioeconomic status and indoor sources of air pollution, but the possibility of confounding by other factors still exists. Throughout the 8-year follow-up, we noted around an 11% loss of study participants per year. Participant attrition is a potential source of bias in cohort studies. We analysed the subset of children who were followed up for the full 8-year duration of the study and also noted significant traffic-effect estimates, which make participant loss an unlikely explanation for our results. We did not note a significant association between growth and model-based pollution from a freeway, despite large estimated deficits in the highest-exposure quartiles (table 1). However, we were restricted in detection of an association with model-based pollution from freeways because there was little variation in this measure within most of our study communities (webtable 2).

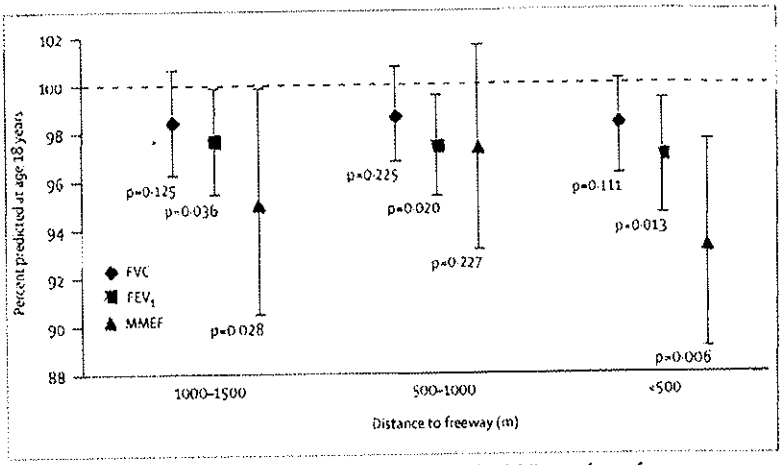

Figure: **Percent-predicted lung function at age 18 years versus residential distance from a freeway**
The horizontal line at 100% corresponds to the referent group, children living >1500 m from a freeway.

We have shown that residential distance from a freeway is associated with significant deficits in 8-year respiratory growth, which result in important deficits in lung function at age 18 years. This study adds to evidence that the present regulatory emphasis on regional air quality might need to be modified to include consideration of local variation in air pollution. In many urban areas, population growth is forcing the construction of housing tracts and schools near to busy roadways, with the result that many children live and attend school in close proximity to major sources of air pollution. In view of the magnitude of the reported effects and the importance of lung function as a determinant of adult morbidity and mortality, reduction of exposure to traffic-related air pollutants could lead to substantial public-health benefits.

Contributors

W J Gauderman, R McConnell, F Gilliland, E Avol, J Peters, M Jerrett and N Kunzli participated in the writing of the manuscript. W J Gauderman, H Vora, K Berhane, D Thomas, and F Lurmann participated in the analysis of the data. All named authors took part in the interpretation of results, and approved the final version of the manuscript.

Conflict of interest statement
We declare that we have no conflict of interest.

Acknowledgments
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References

1 Ware J, Ferris BJ, Dockery D, Spengler J, Stram D, Speizer F. Effects of ambient sulfur oxides and suspended particles on respiratory health of preadolescent children. *Am Rev Respir Dis* 1986; 133: 834–42.

2 Dockery D, Speizer F, Stram D, Ware J, Spengler J, Ferris BJ. Effects of inhalable particles on respiratory health of children. *Am Rev Respir Dis* 1989; 139: 587–94.

3 Schwartz J. Lung function and chronic exposure to air pollution: a cross-sectional analysis of NHANES II. *Environ Res* 1989; 50: 309–21.

4 Raizenne M, Neas L, Damokosh A, et al. Health effects of acid aerosols on North American children: pulmonary function. *Am Rev Respir Dis* 1993; 147: A635.

5 Bascom R, Bromberg P, Costa D, et al. State of the art: health effects of outdoor air pollution, part 1. *Am J Respir Crit Care Med* 1996; 153: 3-50.

6 Bascom R, Bromberg P, Costa D, et al. State of the art: health effects of outdoor air pollution, part 2. *Am J Respir Crit Care Med* 1996; 153: 477–98.

7 Peters J, Avol E, Gauderman W, et al. A study of twelve southern California communities with differing levels and types of air pollution II. Effects on pulmonary function. *Am J Respir Crit Care Med* 1999; 159: 768–75.

8 Kunzli N, Lurmann F, Segal M, Ngo L, Balmes J, Tager IB. Association between lifetime ambient ozone exposure and pulmonary function in college freshmen—results of a pilot study. *Environ Res* 1997; 72: 8–23.

9 Tager IB, Balmes J, Lurmann F, Ngo L, Alcorn S, Kunzli N. Chronic exposure to ambient ozone and lung function in young adults. *Epidemiology* 2005; 16: 751–59.

10 Frischer T, Studnicka M, Gartner C, et al. Lung function growth and ambient ozone: a three-year population study in school children. *Am J Respir Crit Care Med* 1999; 160: 390–96.

11 Jedrychowski W, Flak E, Mroz E. The adverse effect of low levels of ambient air pollutants on lung function growth in preadolescent children. *Environ Health Perspect* 1999; 107: 669–74.

12 Horak FJ, Studnicka M, Gartner C, et al. Particulate matter and lung function growth in children: a 3-yr follow-up study in Austrian schoolchildren. *Eur Respir J* 2002; 19: 838–45.

13 Gauderman W, McConnell R, Gilliland F, et al. Association between air pollution and lung function growth in southern California children. *Am J Respir Crit Care Med* 2000; 162: 1383–90.

14 Gauderman W, Gilliland F, Vora H, et al. Association between air pollution and lung function growth in southern California children: results from a second cohort. *Am J Respir Crit Care Med* 2002; 166: 76–84.

15 Gauderman W, Avol E, Gilliland F, et al. The effect of air pollution on lung development from 10 to 18 years of age. *N Engl J Med* 2004; 351: 1057–67.

16 Gauderman W, Avol E, Lurmann F, et al. Childhood asthma and exposure to traffic and nitrogen dioxide. *Epidemiology* 2005; 16: 737–43.

17 Nicolai T, Carr D, Weiland SK, et al. Urban traffic and pollutant exposure related to respiratory outcomes and atopy in a large sample of children. *Eur Respir J* 2003; 21: 956–63.

18 Venn A, Lewis S, Cooper M, et al. Local road traffic activity and the prevalence, severity, and persistence of wheeze in school children: combined cross sectional and longitudinal study. *Occup Environ Med* 2000; 57: 152–58.

19 Venn AJ, Lewis SA, Cooper M, Hubbard R, Britton J. Living near a main road and the risk of wheezing illness in children. *Am J Respir Crit Care Med* 2001; 164: 2177–80.

20 van Vliet P, Knape M, de Hartog J, Janssen N, Harssema H, Brunekreef B. Motor vehicle exhaust and chronic respiratory symptoms in children living near freeways. *Environ Res* 1997; 74: 122–32.

21 Hirsch T, Weiland SK, von Mutius E, et al. Inner city air pollution and respiratory health and atopy in children. *Eur Respir J* 1999; 14: 669–77.

22 Edwards J, Walters S, Griffiths RK. Hospital admissions for asthma in preschool children: relationship to major roads in Birmingham, United Kingdom. *Arch Environ Health* 1994; 49: 223–27.

23 Kim J, Smorodinsky S, Lipsett M, Singer BC, Hodgson AT, Ostro B. Traffic-related air pollution near busy roads: the East Bay Children's Respiratory Health Study. *Am J Respir Crit Care Med* 2004; 170: 520–26.

24 Brauer M, Hoek G, Van Vliet P, et al. Air pollution from traffic and the development of respiratory infections and asthmatic and allergic symptoms in children. *Am J Respir Crit Care Med* 2002; 166: 1092–98.

25 Zmirou D, Gauvin S, Pin I, et al. Traffic related air pollution and incidence of childhood asthma: results of the Vesta case-control study. *J Epidemiol Community Health* 2004; 58: 18–23.

26 Delfino RJ. Epidemiologic evidence for asthma and exposure to air toxics: linkages between occupational, indoor, and community air pollution research. *Environ Health Perspect* 2002; 110 (suppl 4): 573–89.

27 Janssen NA, Brunekreef B, van Vliet P, et al. The relationship between air pollution from heavy traffic and allergic sensitization, bronchial hyperresponsiveness, and respiratory symptoms in Dutch schoolchildren. *Environ Health Perspect* 2003; 111: 1512–18.

28 McConnell R, Berhane K, Yao L, et al. Traffic, susceptibility, and childhood asthma. *Env Health Perspect* 2006; 114: 766–72.

29 Brunekreef B, Janssen N, de Hartog J, Harssema H, Knape M, van Vliet P. Air pollution from truck traffic and lung function in children living near motorways. *Am J Epidemiol* 1997; 8: 298–303.

30 Wjst M, Reitmeir P, Dold S, et al. Road traffic and adverse effects on respiratory health in children. *BMJ* 1993; 307: 596-600.

31 Sugiri D, Ranft U, Schikowski T, Kramer U. The influence of large-scale airborne particle decline and traffic-related exposure on children's lung function. *Environ Health Perspect* 2006; 114: 282–88.

32 Kulkarni N, Pierse N, Rushton L, Grigg J. Carbon in airway macrophages and lung function in children. *N Engl J Med* 2006; 355: 21–30.

33 Hole D, Watt G, Davey Smith G, et al. Impaired lung function and mortality risk in men and women: findings from the Renfrow and Paisley prospective population study. *BMJ* 1996; 313: 711–15.

34 Knuiman M, James A, Davitini M, et al. Lung function, respiratory symptoms, and mortality: results from the Busselton Health Study. *Ann Epidemiol* 1999; 9: 297–306.

35 Schunemann H, Dorn J, Grant B, et al. Pulmonary function is a long-term predictor of mortality in the general population: 29-year follow-up of the Buffalo Health Study. *Chest* 2000; 118: 656–64.

36 Schroeder E, Welch V, Couper D, et al. Lung function and incident coronary heart disease, the Atherosclerosis Risk in Communities Study. *Am J Epidemiol* 2003; 158: 1171–81.

37 Friedman G, Klatsky A, Siegelaub A, et al. Lung function and risk of myocardial infarction and sudden cardiac death. *N Engl J Med* 1976; 294: 1071–75.

38 Kannell W, Hubert H, Lew E, Jones J. Vital capacity as a predictor of cardiovascular disease: the Framingham Study. *Am Heart J* 1983; 105: 311–15.

39 Ashley F, Kannell W, Sorlie P, et al. Pulmonary function: relation to aging, cigarette habit, and mortality. The Framingham Study. *Ann Intern Med* 1975; 82: 739–45.

40 Peters J, Avol E, Navidi W, et al. A study of twelve southern California communities with differing levels and types of air pollution I. Prevalence of respiratory morbidity. *Am J Respir Crit Care Med* 1999; 159: 760–67.

41 Benson P. CALINE4—A dispersion model for predicting air pollution concentrations near roadways. Sacramento: California Department of Transportation, 1989.

42 Berhane K, Gauderman W, Stram D, Thomas D. Statistical issues in studies of the long term effects of air pollution: the southern California Children's Health Study (with discussion). *Stat Sci* 2005; 19: 414–49.

43 Wang X, Dockery D, Wypij D, et al. Pulmonary function growth velocity in children 6 to 18 years of age. *Am Rev Respir Dis* 1993; **148**: 1502–08.

44 Zhu Y, Hinds WC, Kim S, Sioutas C. Concentration and size distribution of ultrafine particles near a major highway. *J Air Waste Manag Assoc* 2002; **52**: 1032–42.

45 Gilbert NL, Woodhouse S, Stieb DM, Brook JR. Ambient nitrogen dioxide and distance from a major highway. *Sci Total Environ* 2003; **312**: 43–46.

46 Zhu Y, Kuhn T, Mayo P, Hinds WC. Comparison of daytime and nighttime concentration profiles and size distributions of ultrafine particles near a major highway. *Environ Sci Technol* 2006; **40**: 2531–36.

47 Brauer M, Hoek G, van Vliet P, et al. Estimating long-term average particulate air pollution concentrations: application of traffic indicators and geographic information systems. *Epidemiology* 2003; **14**: 228–39.

48 Gilbert NL, Goldberg MS, Beckerman B, Brook JR, Jerrett M. Assessing spatial variability of ambien nitrogen dioxide in Montreal, Canada, with a land-use regression model. *J Air Waste Manag Assoc* 2005; **55**: 1059–63.

49 Gonzales M, Qualls C, Hudgens E, Neas L. Characterization of a spatial gradient of nitrogen dioxide across a United States-Mexico border city during winter. *Sci Total Environ* 2005; **337**: 163–73.

50 Fischer PH, Hoek G, Van Reeuwijka H, et al. Traffic-related differences in outdoor and indoor concentrations of particles and volatile organic compounds in Amsterdam. *Atmos Environ* 2000; **34**: 3713–22.

51 Roorda-Knape MC, Janssen NAH, de Hartog JJ, Van Vliet PHN, Harssema H, Brunekreef B. Air pollution from traffic in city districts near major motorways. *Atmos Environ* 1998; **32**: 1921–30.

52 Khan A, Li J, Husain L. Atmospheric transport of elemental carbon. *J Geophys Res* 2006; **111**: D04303.

53 Manchester-Neesvig J, Schauer J, Cass G. The distribution of particle-phase organic compounds in the atmosphere and their use for source apportionment during the southern California Children's Health Study. *J Air Waste Manag Assoc* 2003; **53**: 1065–79.

54 Li N, Hao M, Phalen RF, Hinds WC, Nel AE. Particulate air pollutants and asthma. A paradigm for the role of oxidative stress in PM-induced adverse health effects. *Clin Immunol* 2003; **109**: 250–65.

55 Nel A. Atmosphere. Air pollution-related illness: effects of particles. *Science* 2005; **308**: 804–06.

Effect of exposure to traffic on lung development from 10 to 18 years of age: a cohort study

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	n	Mean number of PTFs	Children with								
			8-years' follow-up				Race/Ethnic origin (%)				
			n	(%)	Female (%)	Asthma (%)	NHW	HW	AA	Asian	Other
Riverside	329	6·0	123	37·4	50·5	14·6	36·5	42·0	12·5	2·4	6·7
Atascadero	278	6·8	117	42·1	48·9	22·3	75·2	14·8	1·1	1·1	7·9
Alpine	308	6·2	121	39·3	50·1	12·9	75·0	18·8	0·0	0·3	5·8
Long Beach	320	6·1	141	44·1	47·5	13·9	32·2	24·7	18·4	15·3	9·4
San Dimas	293	6·4	117	39·9	50·2	15·3	50·2	32·4	3·1	9·2	5·1
Santa Maria	310	5·7	100	32·3	49·4	14·6	25·2	62·9	1·0	4·5	6·5
Lake Elsinore	306	6·0	104	34·0	50·0	12·5	64·3	25·8	2·3	2·0	5·6
Mira Loma	319	5·9	118	37·0	50·2	12·3	51·7	42·3	1·6	0·9	3·5
Upland	283	6·9	150	53·0	52·7	13·7	66·4	17·3	4·3	8·5	3·5
Lancaster	315	5·5	110	34·9	52·1	14·7	52·1	29·8	9·2	2·2	6·7
Lompoc	281	6·3	113	40·2	47·0	10·3	55·2	28·1	5·7	5·3	5·7
Lake Arrowhead	335	6·2	131	39·1	51·3	14·6	73·1	20·0	0·3	0·9	5·7
Overall	3677	6·2	1445	39·3	49·9	14·3	54·4	30·2	5·0	4·4	6·0

NHW=Non-Hispanic whites. HW=Hispanic whites. AA=African American. PFT=pulmonary-function test.

Webtable 1: **Participants' characteristics by community**

Effect of exposure to traffic on lung development from 10 to 18 years of age: a cohort study

	n	Residential distance to dearest								Model-based pollution from							
		Freeway (m)				Major non-freeway road (m)				Freeways (quartile*)				Major non-freeway roads (quartile*)			
		<500	500–1000	1000–1500	>1500	<75	75–150	150–300	>300	4th	3rd	2nd	1st	4th	3rd	2nd	1st
Riverside	329	103	66	61	99	46	45	90	148	190	123	14	2	149	138	41	1
Atascadero	278	83	60	46	89	11	8	15	244	0	70	155	53	4	17	58	199
Alpine	308	81	54	42	131	41	9	31	227	14	135	141	18	21	43	73	171
Long Beach	320	54	64	54	148	55	79	78	108	264	54	2	0	311	9	0	0
San Dimas	293	47	145	83	18	45	47	62	139	282	8	1	2	169	114	9	1
Santa Maria	310	44	74	58	134	25	47	104	134	0	7	73	230	18	191	64	37
Lake Elsinore	306	12	17	7	270	32	33	50	191	1	41	184	80	17	27	103	159
Mira Loma	319	9	30	45	235	20	37	57	205	11	304	2	2	12	43	212	52
Upland	283	4	0	0	279	53	52	62	116	4	2	85	192	83	100	60	40
Lancaster	315	3	35	31	246	52	24	91	148	0	21	108	186	48	127	128	12
Lompoc	281	0	0	0	281	5	21	33	222	..	..	..	..	4	26	88	163
Lake Arrowhead	335	0	0	0	335	0	0	0	335	..	..	..	..	..	..	..	..
Total	3677	440	545	427	2265	385	402	673	2217	766	765	765	765	836	835	836	835

* There is no major freeway within Lompoc or Lake Arrowhead, and no major non-freeway road within Lake Arrowhead.

Webtable 2: Number of study participants within categories of four traffic indicators

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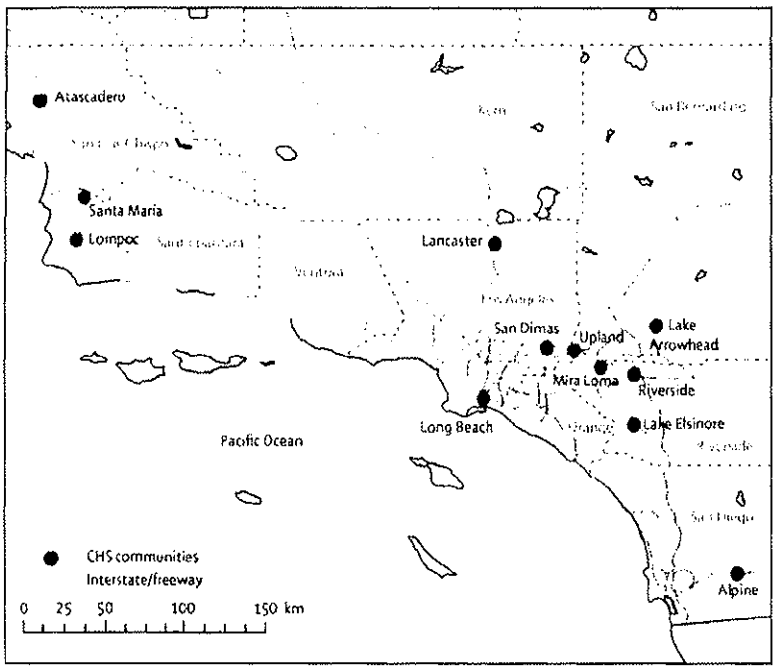

Webfigure: Location of the 12 Children's Health Study communities and the major freeways (purple lines) in southern California.

Effect of exposure to traffic on lung development from 10 to 18 years of age: a cohort study

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Details of exposure assessment

Traffic exposures were assigned to each child on the basis of the residence at study entry. Residence addresses were standardised and their locations geocoded by use of the TeleAtlas database and software (Tele Atlas Inc., Menlo Park, CA, www.na.teleatlas.com). We used ERSI ArcGIS version 8.3 (ESRI, Redland, CA www.esri.com) software to calculate the distance from each residence to the nearest freeway, defined as an interstate freeway, US highway, or restricted-access highway, and to the nearest major non-freeway road, which included other types of highways and large roads. Yearly average daily traffic volumes were obtained from the California Department of Transportation Highway Performance Monitoring System for the year 2000. To obtain model-based estimates of traffic-related pollution exposure, we used the CALINE4 line-source air-quality dispersion model, separately for freeways and non-freeway roads.[1] The main model inputs included roadway geometry, traffic volumes, meteorological conditions (wind speed and direction, atmospheric stability, and mixing heights), and vehicle emission rates. We used the CALINE4 model to predict nitrogen dioxide concentrations derived from freeways and non-freeways at each child's home. Categories of exposure were then formed on the basis of quartiles of the within-community distribution of child-specific predictions, specifically based on cutpoints 0·6, 1·9, and 7·1 parts per billion (ppb) from freeways, and 1·5, 2·6, and 5·3 ppb from non-freeway roads. We also used the CALINE4 model to predict concentrations of other traffic-related pollutants, including oxides of nitrogen, elemental carbon, and carbon monoxide. However, predictions for each of these pollutants were almost perfectly correlated (around 0·99) with predictions of nitrogen dioxide. Thus, our model-based concentrations should be viewed as general measures of traffic-related pollution rather than this pollutant specifically. For both distance and model-based traffic indicators, within-community deviations from the corresponding community mean of the indicator were used in the health models to assess local (rather than between-community) effects.

Air-pollution monitoring stations were established in each of the 12 study communities and provided continuous monitoring data from 1994 to 2003. Each station measured average hourly concentrations of ozone, nitrogen dioxide, and particulate matter with aerodynamic diameter less than 10 μm (PM_{10}). Stations also collected 2-week integrated filter samples for measuring acid vapour and $PM_{2.5}$ mass and chemistry. Acid vapour included both inorganic (nitric, hydrochloric) and organic (formic, acetic) acids. For statistical analysis, we used total acid calculated as the sum of nitric, formic, and acetic acid concentrations. Hydrochloric acid was excluded from this sum, because concentrations were very low and close to the detection limit. In addition to measurement of $PM_{2.5}$ mass, we measured concentrations of elemental carbon and organic carbon, using the NIOSH 5040 method.[2] We calculated yearly averages on the basis of 24 h (PM_{10}, nitrogen dioxide) or 2-week ($PM_{2.5}$, elemental carbon, organic carbon, acid) average concentrations. For ozone, we calculated the yearly average of the 1000–1800 h (8 h daytime) average. Long-term mean pollutant concentrations (between 1994 and 2000 for cohort 1 and 1996 and 2003 for cohort 2) were also calculated for use in the statistical analysis of the lung-function outcomes. The distribution and correlation structure of these pollutants across communities, and their effect on lung function development, have been previously reported.[3–5] In this paper, we used community-average pollutant concentrations in models of local traffic exposure to investigate their combined effects and to explore the possibility that traffic effects vary according to regional air quality.

References

1 Benson P. CALINE4—A dispersion model for predicting air pollution concentrations near roadways. Sacramento: California Department of Transportation, 1989.

2 NIOSH Method 5040 Issue 3 (Interim): Elemental Carbon (Diesel Exhaust). In NIOSH Manual of Analytical Methods. Cincinnati, Ohio: National Institute of Occupational Safety and Health, 1999.

3 Gauderman W, McConnell R, Gilliland F, et al. Association between air pollution and lung function growth in southern California children. *Am J Respir Crit Care Med* 2000; 162: 1383–90.

4 Gauderman W, Gilliland F, Vora H, et al. Association between air pollution and lung function growth in southern California children: results from a second cohort. *Am J Respir Crit Care Med* 2002; 166: 76–84.

5 Gauderman W, Avol E, Gilliland F, et al. The effect of air pollution on lung development from 10 to 18 years of age. *N Engl J Med* 2004; 351: 1057–67.

Attachment 7

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The effects of roadside structures on the transport and dispersion of ultrafine particles from highways

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Abstract

Understanding local-scale transport and dispersion of pollutants emitted from traffic sources is important for urban planning and air quality assessments. Predicting pollutant concentration patterns in complex environments depends on accurate representations of local features (e.g., noise barriers, trees, buildings) affecting near-field air flows. This study examined the effects of roadside barriers on the flow patterns and dispersion of pollutants from a high-traffic highway in Raleigh, North Carolina, USA. The effects of the structures were analyzed using the Quick Urban & Industrial Complex (QUIC) model, an empirically based diagnostic tool which simulates fine-scale wind field and dispersion patterns around obstacles. Model simulations were compared with the spatial distributions of ultrafine particles (UFP) from vehicular emissions measured using a passenger van equipped with a Differential Mobility Analyzer/Condensation Particle Counter. The field site allowed for an evaluation of pollutant concentrations in open terrain, with a noise barrier present near the road, and with a noise barrier and vegetation present near the road.

Results indicated that air pollutant concentrations near the road were generally higher in open terrain situations with no barriers present; however, concentrations for this case decreased faster with distance than when roadside barriers were present. The presence of a noise barrier and vegetation resulted in the lowest downwind pollutant concentrations, indicating that the plume under this condition was relatively uniform and vertically well-mixed. Comparison of the QUIC model with the mobile UFP measurements indicated that QUIC reasonably represented pollutant transport and dispersion for each of the study configurations.

Keywords: Air quality; Dispersion modeling; Noise barriers; Vegetation; Mobile sources; QUIC

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1. Introduction

In recent years, a number of human epidemiological studies have reported associations between population's proximity to high-traffic roadways and adverse health effects that include respiratory, cardiovascular, birth, cancer, and mortality impacts (e.g., Pearson et al., 2000; Wilhelm and Ritz, 2003; Peters et al., 2004; Jerrett et al., 2005; McConnell et al., 2006). Several air quality monitoring studies have measured elevated concentrations of a number of air pollutants near roadways including ultrafine particles (UFP, aerodynamic diameter $<0.1\,\mu m$) (Zhu et al., 2002a, b; Sapkota and Buckley, 2003; Kittelson et al., 2004). The majority of particulate matter (PM) mass emitted by motor vehicle combustion occurs in the $PM_{2.5}$ size range, with mass median diameters generally between 0.1 and $0.2\,\mu m$ for gasoline and diesel vehicles (Cadle et al., 1999; Durbin et al., 1999; Kleeman et al., 2000). The number of particles emitted by gasoline and diesel vehicles occurs primarily in the UFP size range, so the occurrence of high concentrations of these particles near the road likely represents primary combustion emissions from motor vehicles on that road. As a first approximation, we used the number concentration of UFP to examine initial dispersion patterns from the roadway.

The initial dispersion of pollutants from traffic emissions will likely be affected by vehicular-induced turbulence (Kalthoff et al., 2005) and by local obstacles, such as noise barriers, buildings, and vegetation. These barriers are common features of high-traffic roadways, particularly those which run through populated areas. These features may block dispersion, increase turbulence and initial mixing, and filter or otherwise enhance deposition (Tan and Lepp, 1977; Madders and Lawrence, 1985; Veerabhadra Swamy and Lokesh, 1993; Hölscher et al., 1993). Wind perpendicular to the barrier may lead to an upward deflection of air flow caused by the structure, which could increase the apparent release height of the pollutant and increased vertical mixing due to the flow separation at the top of the barrier (Lidman, 1985). In addition, a recirculation cavity forms in the lee of the structure. For noise barriers, studies have reported that this recirculation cavity can extend between 3 and 12 wall heights downwind, be well-mixed and often has substantially lower pollutant concentrations (between 0% and 80% of the roadside values) (Nokes and Benson, 1984; Paul-Carpenter and Barboza, 1988; Hölscher et al., 1993; Veerabhadra Swamy and Lokesh, 1993).

A number of regulatory line source dispersion models used in vehicular traffic assessments exist (e.g., CALINE, Benson, 1992; Nagendra and Khare, 2002). These models are simple Gaussian plume models, and do not explicitly simulate the complex flows around individual structures. Thus, these models may not adequately represent local near-roadway concentrations for common complex road configurations within the first few hundred meters from roadside obstacles.

The objective of this study was to explore the effects of roadside obstacles on the near-field dispersion patterns of traffic emissions. We used two independent methods to investigate the effect of a barrier on pollutant concentrations with wind perpendicular from the road: fine-scale numerical modeling and direct measurements of UFP using a mobile monitor.

2. Modeling approach

Characterizing the dispersion in the near road environment requires the use of modeling tools capable of resolving complex flow patterns induced by roadside barriers. We used the fast-response, mass-consistent diagnostic wind-field model Quick Urban & Industrial Complex (QUIC) (version 4.3; Los Alamos National Laboratory/University of Utah) to simulate the airflow patterns and dispersion of pollutants in the near-road environment and explore the effects of roadside barriers on air quality. QUIC predicts the airflow patterns and resulting dispersion of contaminants within complex urban areas (Pardyjak and Brown, 2003; Pardyjak et al., 2004; Williams et al., 2005a, b; Gowardhan et al., 2006). QUIC predicts velocities and concentrations at uniformly spaced grid cells throughout a complex three dimensional domain of interest. The predictions are time-averaged and represent steady-state conditions.

In this study, we used the QUIC model to simulate transport and dispersion of pollutants from a portion of a roadway running through a suburban area. The EPA conducted a field study in July and August, 2006, near a heavily-traveled (125,000 vehicles per day) 8-lane segment of Interstate 440 (I-440) in Raleigh, North Carolina, USA (35°49′28″N, 78°36′54″W) (Fig. 1). Mobile monitoring and on-site meteorological measurements were made as part of this field study.

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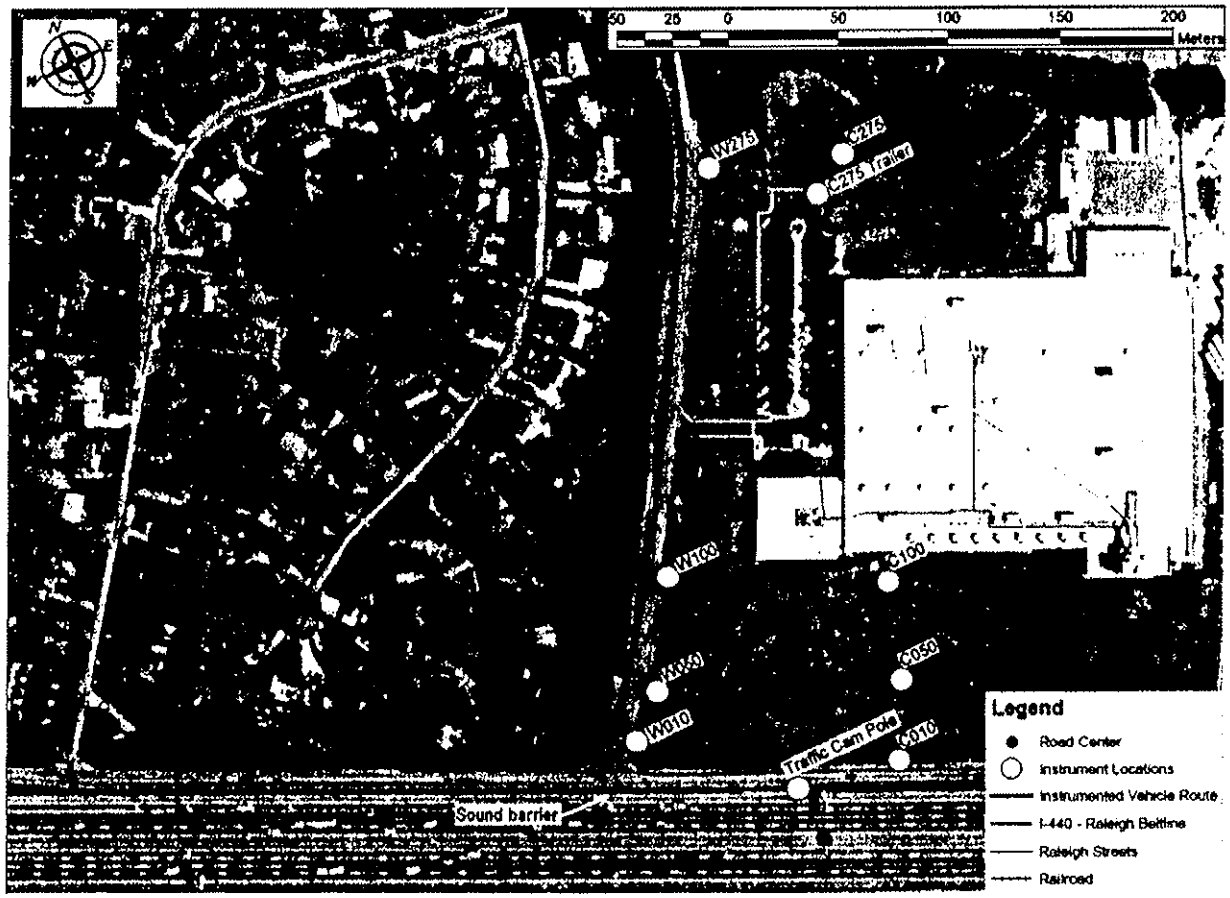

Fig. 1. Aerial map of the near-road field study site along I-440 in Raleigh, North Carolina showing locations of mobile measurements (teal) using a GPS sensor.

The domain contained two adjacent land-use classes downwind from the road: (1) an open mowed-grass lawn with a few isolated stands of trees and no roadside barriers with a wide single-story building (used as an adult educational facility) occupying the central open area ~120 m away from the road and (2) a suburban neighborhood with many tall trees interspersed among one- and two-story houses and a noise barrier adjacent to the highway.

For the QUIC simulations, we modeled the domain at 2-m resolution (700 m along the road by 500 m away from the road by 50 m in height) that included the field study site measurement locations (Fig. 2). Within QUIC, the complex geometry of the site was modeled using solid non-permeable simple shapes (blocks and cylinders). We explored the three representations of the field site, each progressively increasing in complexity: (1) A "base" case consisting of a uniform flat domain with no obstacles and no noise barrier. (2) A "noise barrier-only" case, where a noise barrier (6 m tall, 352 m long, and 2 m wide) extended along the domain parallel to the line sources. (3) A representation of the highly complex "field study site" including the barrier, buildings, and vegetation (Fig. 2). The buildings and stands of trees were modeled as solid, non-porous, rectangular blocks, with heights approximated from photographs taken at the site. The locations and lateral dimensions of the blocks were made directly from the aerial photograph (Fig. 2). Vegetation was modeled using solid blocks because QUIC currently has no ability to model "porous" blocks. Care was taken to leave openings between the vegetation blocks to ensure that flow was "disturbed" (with enhanced vertical and lateral mixing) rather than blocked. Solid blocks representing stands of vegetation have been previously used in QUIC simulations

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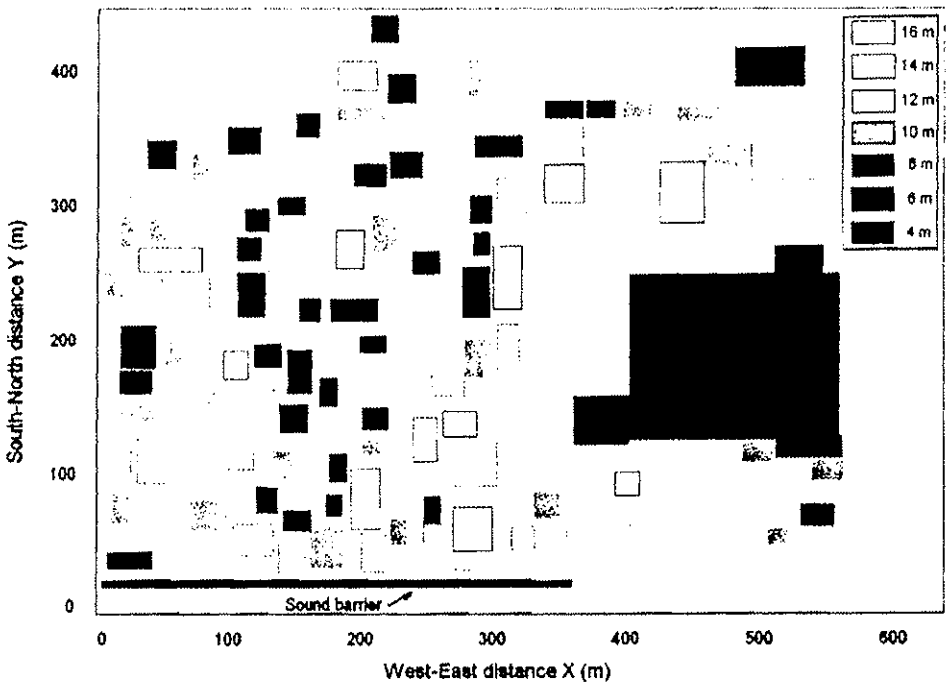

Fig. 2. Plan view of the QUIC modeling domain. The legend indicates the height of the structures.

of wind velocity in the desert (Bowker et al., 2006, 2007).

To predict the flow patterns, QUIC applies an empirical formulation of the flow around each block within the geometry, and then applies mass conservation to the resulting flow field. The parameterized representation of the flow around an individual block consists of two essential features: (1) a region of slow, recirculating flow on the windward side of the block (Pardyjak and Brown, 2003; Bagal et al., 2004); (2) a large wake-effect region on the leeward side of the block characterized by a recirculating cavity zone as well as a zone of depressed velocities (Pardyjak and Brown, 2003; Pardyjak et al., 2004; Singh et al., 2006). The parameterization for the length of the leeward recirculation zone at ground level, L_c, used in QUIC is

$$\frac{L_c}{H} = \left(\frac{1.8\,W/H}{(L/H)^{0.3}(1 + W/H)}\right), \tag{1}$$

where H is the height of the barrier, L is the crosswind length of the barrier, and W is the thickness (Pardyjak and Brown, 2003). For the noise barrier in the modeling domain (6 m tall, 352 m long, and 2 m wide), L_c is about 58.4 m (9.7 barrier heights).

The velocities around each individual block vary directly in magnitude with the input boundary layer velocity profile. We assume neutral atmospheric stability class and that the input velocity profile is logarithmic

$$U_{\mathrm{ref}} = \frac{u_*}{\kappa}\ln\left(\frac{z-d}{z_0}\right), \tag{2}$$

where κ is Von Karman's constant (nominally 0.4), z (7 m) is the height for the reference wind speed U_{ref}, u_* is the friction velocity ($\mathrm{m\,s^{-1}}$), z_0 is the roughness length (m), and d (m) is the zero-plane displacement height (assumed to be zero).

Upwind of the study domain consisted of relatively flat and uniform single-story buildings at a slightly lower elevation than the highway. This downslope resulted in the tops of the buildings being essentially even with the elevation of the surface of the roadway. Although Grimmond et al. (1998) report an average z_0 of ~0.7 m for residential, commercial, and mixed use areas in suburban settings, we chose a z_0 of 0.05 m as more appropriate to match the flow conditions at the site.

The reference wind speed, U_{ref}, was 2.25 $\mathrm{m\,s^{-1}}$ (with standard deviation 0.3 $\mathrm{m\,s^{-1}}$). This value was found by averaging 11 consecutive 10-min average

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wind velocities during the time period the mobile van was taking measurements (7 August 2006 from 8 to 10 AM, EST) used in the model-to-monitor comparisons. The 10-min averages were created from 10 Hz sonic anemometer measurements collected by an instrument mounted on a trailer ~20 m from the road at a height of 7 m above ground. We also determined the average wind direction measured by this sonic anemometer (208° with a standard deviation of 5°). This translates to a wind direction of 180° in the QUIC coordinate system, exactly perpendicular to the road.

The concentration predictions within QUIC (Williams et al., 2005a, b) were based on following the trajectories of simulated neutrally buoyant "massless" particles released at a rate of 5000 particles per time step (1 s) along two line sources. Each line source (692 m long and parallel to the X-axis at a height of 1 m) was intended to simulate the tail-pipe releases from one of the traffic directions of the highway. The line sources were located at $Y = -20$ and 0, 32 and 12 m away from the noise barrier, respectively. Several line sources were used since QUIC does not simulate rectangular block volume sources, and does not include vehicle-induced turbulence.

Particles released from the line sources underwent a "random-walk" through the domain based on the predicted wind velocity field. The particles also "diffused" based on "turbulence" levels, in part, derived from the model-predicted velocity gradients. The concentration value for a grid cell was calculated by summing the number of particles within the cell at each time step. Within each grid cell, we computed the time-averaged concentration for 900 s (after a 300 s time period to reach an equilibrium state).

We varied the time step, grid cell size, averaging time, number of particles released, and placement of the line sources relative to the barrier, resolving the simulations to the point where the time-averaged concentrations were stable and no longer sensitive to small changes in these variables.

3. QUIC model results

The QUIC simulations showed the influence of the roadside barriers on the airflow and pollutant dispersion patterns. The time-averaged horizontal dispersion patterns at a height of 1 m above ground for the three simulations (base, barrier-only, and field-site) are shown in Fig. 3. For all three simulations, the QUIC concentration values were

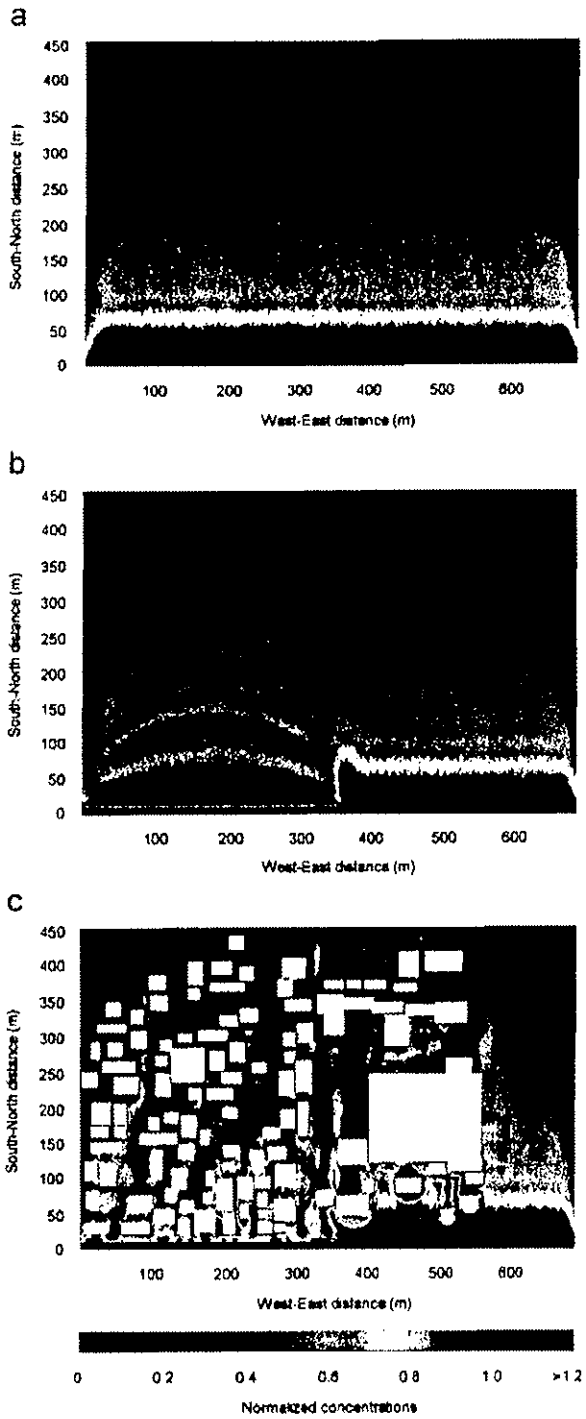

Fig. 3. Plan view showing horizontal concentration patterns simulated in QUIC at a height of 1 m for the three simulations (a) base case, (b) sound barrier only, and (c) the field site.

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normalized by the median concentration value found in the open area of the base simulation at a height 3 m above ground (which corresponds to the air intake of the mobile van); specifically, the first row of grid cells along the leading edge of the access road, from $X = 400$ to 640 m at $Y = 14$ m. This location was chosen because the concentrations were quite high, and should favorably compare with the mobile measurements since the emissions from the highway were just moving a short distance across flat, open terrain. Generally, the highest concentrations were seen in close proximity to the highway. High concentrations persisted near the ground in the open areas for all three simulations, but were substantially reduced in the lee of the noise barrier for the barrier-only and field-site simulations.

The patterns of pollution dispersion followed the airflow patterns. The presence of obstacles perturbed the flow streamlines. As expected in the velocity patterns for the noise barrier simulations, the flow streamlines moved vertically up and over the barrier (Fig. 4). A wake region in the lee of the noise barrier was characterized by slow velocities, a recirculation zone, and lower concentrations relative to the base simulation.

Fig. 5 shows vertical cross-sections of modeled concentrations for the three simulations (base, barrier-only, and field-site configurations) in the area behind the barrier. Each vertical cross-section represents the median cross-wind concentration modeled for that portion of the domain. The highest and most-extensive concentrations were seen in the open terrain base simulation, due to the lack of vertical mixing and dispersion of the plume. The wind movement over the noise barrier lifted the plume relative to the base simulation (Fig. 4). The relative concentrations in the lee of the barrier for the three simulations are seen in Fig. 6a, showing horizontal concentration profiles along the lee side of the barrier (median values from $Y = 14$ to 34 m) at a height of 3 m. The highest concentrations were found for the base simulation, followed by the field-site (barrier with trees) simulation (~50% of the base simulation values), and finally the barrier-only simulation (~5% of the base simulation concentrations) (Fig. 6a). Little pollutant mixed down into the recirculation cavity for the barrier-only simulation, leading to extremely low concentrations. Veerabhadra Swamy and Lokesh (1993) found similar patterns for lead deposition around solid and vegetative barriers, showing essentially no lead from traffic emissions in the lee of the barriers.

The concentrations for the barrier-only and field-site simulations were approximately the same as the base simulation in the open area near the road (from $X = 400$ to 690 m) (Fig. 3). Enhanced concentrations were predicted by QUIC where the noise barrier ends (at about $X = 350$ m), suggesting that plume material from the front of the barrier was moving laterally and being swept downwind at the edge of the barrier.

Differences were seen in the concentrations downwind of the barrier recirculation zone area for all three simulations (Figs. 5 and 7a). For the barrier-only simulation, results suggested that after the plume was elevated by the barrier and passed over the recirculation zone, it returned to ground level. Thus, concentrations were ~35% higher

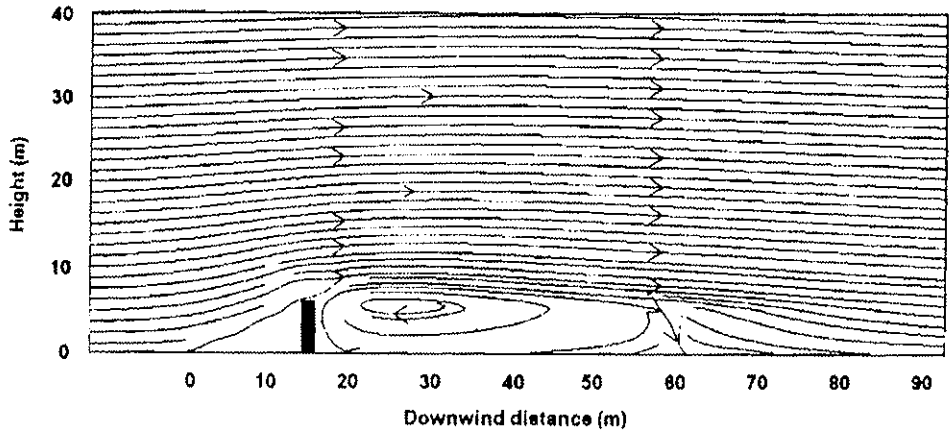

Fig. 4. Elevation view showing flow streamlines for the "barrier only" case. Flow is from left to right. A large recirculation zone is present downwind of the sound barrier.

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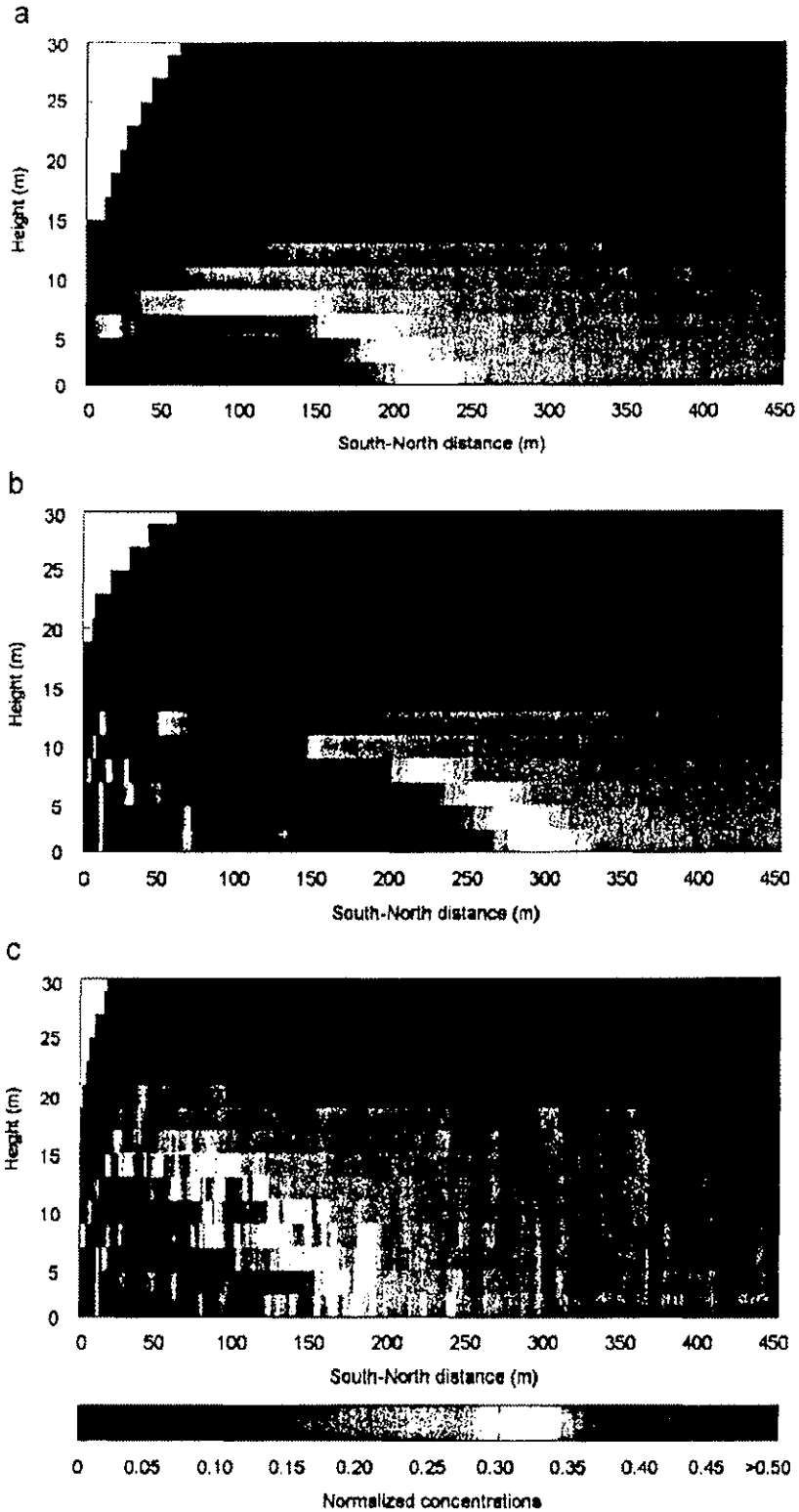

Fig. 5. Vertical alongwind sections showing the median cross-wind concentration behind the barrier as a function of downwind distance for (a) the base, (b) barrier-only, and (c) field site simulations. The line sources are at $X = -20$ and 0 m. The barrier is at $X = 12$ m.

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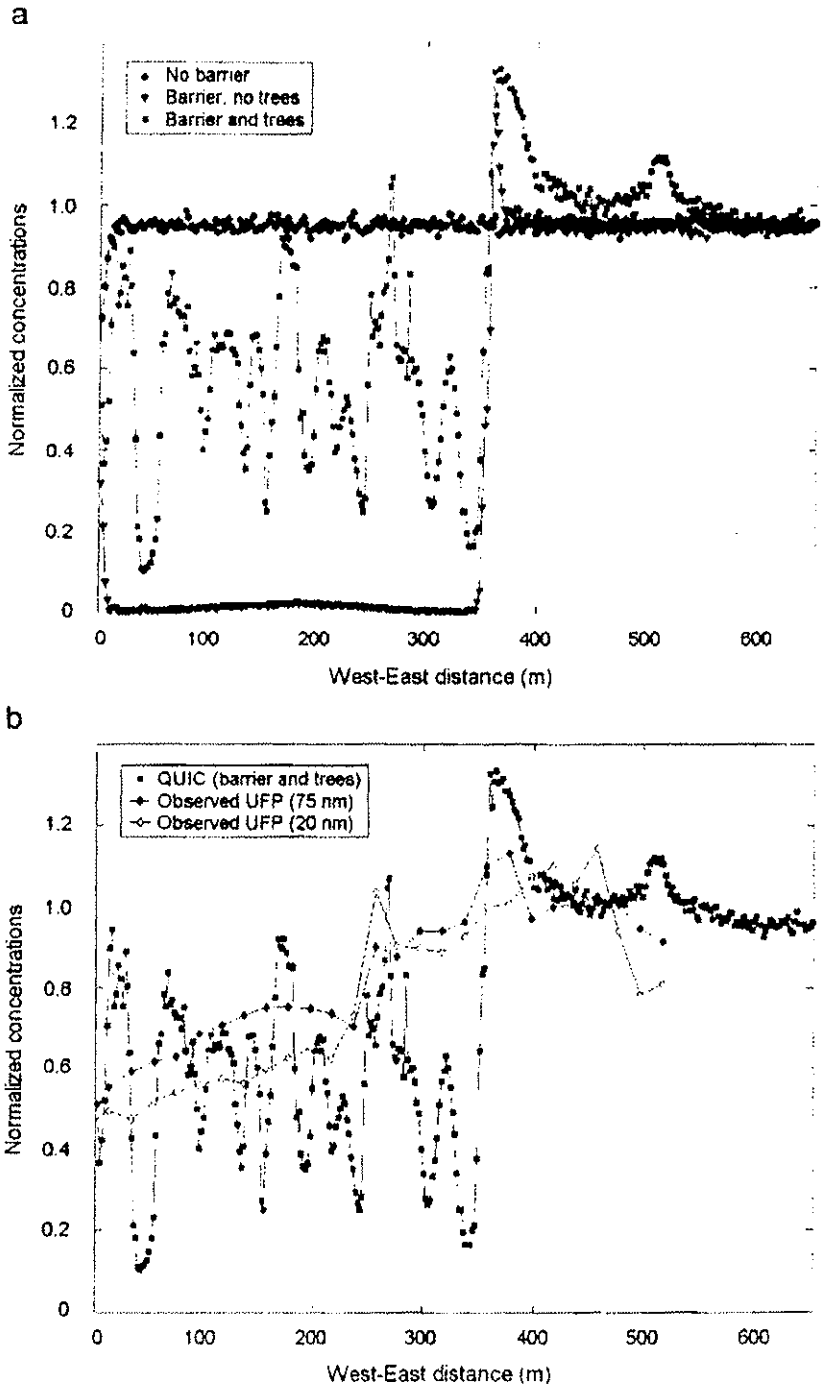

Fig. 6. Normalized cross-wind concentration profiles (at 3-m) taken along the access road parallel to I-440 (median values from $Y = 14$ to 34 m) for (a) the three different QUIC simulations (base, sound barrier only, and field site), and (b) the mobile measurements for two classes of particulates (75 nm, black and 20 nm, yellow diamonds) over a 2-h period compared with the QUIC simulation of the field site.

where the plume reattachment occurred (~80 m from the second line source at $Y = 0$) compared with the base simulation. At greater distances from the road, the barrier-only concentrations remained higher, approaching the base simulation values near the edge of the domain (Fig. 7a). The base

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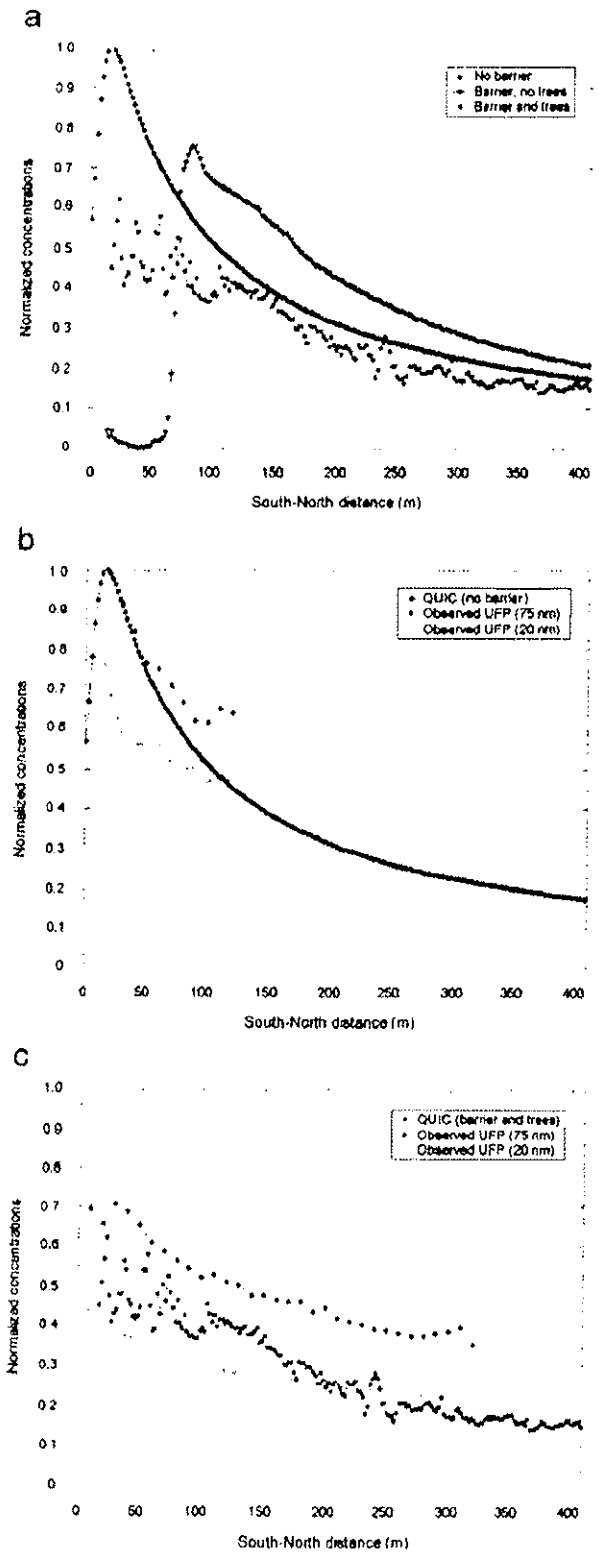

simulation contrasted with the field-site simulation (noise barrier and vegetation), where the plume was extremely well-mixed vertically after encountering the barrier and going through the trees leading to decreased average concentrations at all downwind distances.

4. Comparison of model estimates with observations

Observations from mobile measurements collected at the site were compared with QUIC model predictions to evaluate roadside structure effects and evaluate model results. Fig. 1 shows the route along which a mobile monitoring van identified temporal and spatial patterns of pollution for the complex study domain. Highly time-resolved measurements of UFP were collected while sampling continuously and driving through the domain. The resulting concentrations were recorded as functions of location and time using a global positioning system (GPS). The driving route was selected to cover the two scenarios of interest in the study domain (Fig. 1). By driving through the areas with and without a noise barrier next to the road, and also on transects away from the road that had no barriers and noise barrier and vegetation, the effects of these features on the concentration field were characterized. Because the concentration field varied not only spatially but temporally, the same route was traversed multiple times during the study period, with each route taking generally 10 min to complete. At a 1 Hz sampling frequency, this resulted in ~600 concentration measurements for each route. Since traffic activity on I-440 did not significantly vary over the 10-min sampling period for each route, we assumed that emission rates during the measurement time periods were relatively constant. For the comparisons with QUIC, we selected a 2-h time period (7 August 2006 from 8 to 10 AM EST) during which the wind was essentially constant and perpendicular from the roadway. To obtain a reliable statistical description of the mean and variability in concentration at each point and to create spatial maps of pollutant concentrations, we

Fig. 7. Normalized concentrations as a function of downwind distance (at 3 m) for: (a) the three different QUIC simulations (base, sound barrier only, and field site); (b) the mobile measurements in the open area and the QUIC model for the base case; and, (c) comparison between mobile measurements and the QUIC model for the field site in the region downwind of the sound barrier in the residential neighborhood. For all cases, the sound barrier is located at $X = 12$ m.

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averaged all the measurements that occurred within each $20 \times 20\,m^2$ area over the course of the measurement time period. Thus, each point comprised the average of ~60 individual point measurements. A detailed description of the modeling platform and the methodology to create spatial maps is given in Khlystov and Ma (2006).

Number concentrations of 20 and 75 nm particles were measured using two identical differential mobility analyzer—Condensation Particle Counter (DMA-CPC) combinations. Standard parts from TSI Inc (TSI 3071 DMA and TSI 3010 CPC) were used to build the instruments. The DMAs were operated at $10\,L\,min^{-1}$ sheath flow rate and $1\,L\,min^{-1}$ sample flow rate. One DMA was set to a constant voltage, selecting a nearly monodisperse aerosol 20 nm in diameter. The other DMA was set to a voltage corresponding to 75 nm. The particles selected by the DMAs were counted by the CPCs at 10 Hz. The particle counts were converted to number concentrations using the charging efficiency for the particles at that size. To obtain information on other particle sizes and to assess how the variability at one size compares with the variability at other sizes a limited set of runs were made over the same route during which one instrument was sampling 20 nm particles at 10 Hz, while the other was operated in the SMPS mode (Wang and Flagan, 1990) measuring the size distribution in the range 12–300 nm with the time resolution of 20 s.

For the comparison of QUIC model results with observations, we selected two bins from the entire distribution of the observed UFP size range: 20 and 75 nm particles. All the concentrations from the mobile measurements were normalized by taking the median value in the open area along the access road directly adjacent to the highway. Comparison of normalized measurement data with normalized modeling data allowed for an assessment of pollutant transport and dispersion from the roadway without needing to account for background pollutant concentrations or changes in traffic emission factors over long time-periods.

Similar gradients were identified in the mobile measurements as in the QUIC results (Figs. 6b, 7b and c), though minor differences were seen in the absolute magnitudes and rates of decay with distance. In general, the measured concentrations were highest in the open area directly adjacent to I-440, while the concentrations in the lee of the noise barrier at an equivalent distance from the roadway were ~60% of the concentrations in the open area (Fig. 6b).

The concentrations of both the 20 and 75 nm particles decreased with distance from the road, with the rates for the open transect (Fig. 7b) higher than for the residential area (Fig. 7c). Qualitatively comparing the QUIC simulations and the measurements in both transects, the decay rates appeared to be similar, though initial concentrations and differences in the mixing zones led to some offset in the rates.

5. Summary

At the local-scale, features such as noise barriers, trees, and buildings can have dramatic effects on the initial dispersion of pollutants from roadways, influencing concentrations up to several hundred meters from the road. For winds perpendicular to the roadway, under neutral stability atmospheric conditions, noise barriers appeared to influence dispersion patterns in three ways. First, the plume moved up and over the noise barrier, simulating an elevated source. As with elevated sources, plume reattachment occurred further downwind. Second, a recirculation wake region formed in the lee of the barrier, and concentrations were reduced compared with an open area with no barrier. Third, when the elevated plume encountered other downwind obstacles (e.g., trees or buildings), increased mixing occurred leading to decreased pollutant concentrations. Further research is needed to identify the effects of these structures under varying wind and topographic conditions.

Predictions from the diagnostic wind field and dispersion model, QUIC, were compared with mobile measurements of UFPs in this study. The comparisons suggested that QUIC adequately reproduced the complex flow and dispersion patterns around the roadside structures, demonstrating potential value as a diagnostic tool for this application. Further evaluation of this model will likely be necessary before using this model in regulatory and urban planning applications.

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Disclaimer

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References

Bagal, N.L., Pardyjak, E.R., Brown, M.J., 2004. Improved upwind parameterization for a fast response urban wind model. In: 84th American Meterological Society Conference: Symposium on Planning, Nowcasting, and Forecasting in the Urban Zone. Seattle, WA. January, 7.4, 5pp.

Benson, P.E., 1992. A review of the development and application of the CALINE3 and 4 Models. Atmospheric Environment 26, 379–390.

Bowker, G.E., Gillette, D.A., Bergametti, G., Marticorena, B., 2006. Modeling flow patterns in a small vegetated area in the northern Chihuahuan Desert using QUIC (Quick Urban & Industrial Complex). Environmental Fluid Mechanics 6, 359–384.

Bowker, G.E., Gillette, D.A., Bergametti, G., Marticorena, B., Heist, D.K., 2007. Sand flux simulations at a small scale over a heterogeneous mesquite area of the northern Chihuahuan Desert. Journal of Applied Meteorology and Climatology, in press.

Cadle, S.H., Mulawa, P., Hunsanger, E.C., Nelson, K., Ragazzi, R.A., Barrett, R., Gallagher, G.L., Lawson, D.R., Knapp, K.T., Snow, R., 1999. Light-duty motor vehicle exhaust particulate matter measurement in the Denver, Colorado area. Journal of the Air and Waste Management Association 49 PM-164-174.

Durbin, T.D., Smith, M.R., Norbeck, J.M., Truex, T.J., 1999. Population density, particulate emission characterization, and impact on the particulate inventory of smoking vehicles in the South Coast Air Quality Management District. Journal of the Air and Waste Management Association 49, 28–38.

Gowardhan, A.A., Brown, M.J., Williams, M.D., Pardyjak, E., 2006. Evaluation of the QUIC Urban Dispersion Model using the Salt Lake City URBAN 2000 Tracer Experiment Data—IOP 10. In: Sixth Symposium on the Urban Environment/ 14th Joint Conference on the Applications of Air Pollution Meteorology with the Air and Waste Management Association. Atlanta. January, J6.3, 13pp.

Grimmond, C.S.B., King, T.S., Roth, M., Oke, T.R., 1998. Aerodynamic roughness of urban areas derived from wind observations. Boundary-Layer Meteorology 89, 1–24.

Hölscher, N., Höffer, R., Niemann, H-J., Brilon, W., Romberg, E., 1993. Wind tunnel experiments on micro-scale dispersion of exhausts from motorways. Science of the Total Environment 134, 71–79.

Jerrett, M., Burnett, R., Pope, C.A., Krewski, D., Bruce, K., Thurston, G., Shi, Y., Finklestein, N., Calle, E.E., Thun, M.J., 2005. Spatial analysis of air pollution and mortality in Los Angeles. Epidemiology 16 (6).

Kalthoff, N., Baumer, D., Corsmeier, U., Kohler, M., Vogel, B., 2005. Vehicle-induced turbulence near a motorway. Atmospheric Environment 39, 5737–5749.

Khlystov, A., Ma, Y., 2006. An on-line instrument for mobile measurements of the spatial variability of hexavalent and trivalent chromium in urban air. Atmospheric Environment 40, 8088–8093.

Kittelson, D.B., Watts, W.F., Johnson, J.P., 2004. Nanoparticle emissions on Minnesota highways. Atmospheric Environment 38 (1), 9–19.

Kleeman, M.J., Schauer, J.J., Cass, G.R., 2000. Size and composition distribution of fine particulate matter emitted from motor vehicles. Environmental Science and Technology 34, 1132–1142.

Lidman, J.K., 1985. Effect of a noise wall on snow accumulation and air quality. Transportation Research Record 1033, 79–88.

Madders, M., Lawrence, M., 1985. The contribution made by vegetation buffer zones to improved air quality in urban areas. In: Hall, D.O., Myers, N., Margaris, N.S. (Eds.), Economics of Ecosystems Management. Dr. W. Junk Publishers, Dordrecht, Netherlands.

McConnell, R., Berhane, K., Yao, L., Jerrett, M., Lurmann, F., Gilliland, F., Kuenzli, N., Gauderman, J., Avol, E., Thomas, D., Peters, J., 2006. Traffic, susceptibility, and childhood asthma. Environmental Health Perspectives 114 (5), 7 66–772.

Nagendra, S.M.S., Khare, M., 2002. Line source emission modeling. Atmospheric Environment 36, 2083–2098.

Nokes, W.A., Benson, P.E., 1984. Carbon monoxide concentrations adjacent to sound barriers. Office of Transportation Laboratory, California Department of Transportation. Report FHWA/CA/TL-84/04.

Pardyjak, E., Brown, M., 2003. QUIC-URB v1.1 Theory and User's Guide. Los Alamos National Laboratory, Los Alamos, NM.

Pardyjak, E.R., Brown, M.J., Bagal, N.L., 2004. Improved velocity deficit parameterizations for a fast response urban wind model. In: 84th American Meteorological Society Conference: Modeling Urban Land Surfaces and Buildings: Part 2, Seattle, WA. January, 7.4, 5pp.

Paul-Carpenter, S., Barboza, M.J., 1988. Effects of highway noise barriers on carbon monoxide levels. In: 81st Annual meeting of the Air Pollution Control Association (APCA), Dallas, TX, June 1988.

Pearson, R.L., Wachtel, H., Ebi, L., 2000. Distance-weighted traffic density in proximity to a home is a risk factor for

Please cite this article as: Bowker, G.E., et al., The effects of roadside structures on the transport and dispersion of ultrafine particles from highways. Atmospheric Environment (2007), doi:10.1016/j.atmosenv.2007.06.064

leukemia and other childhood cancers. Journal of the Air and Waste Management Association 50, 175–180.

Peters, A., von Klot, S., Heier, M., Trentinaglia, I., Hormann, A., Wichmann, E., Lowel, H., 2004. Exposure to traffic and the onset of myocardial infarction. New England Journal of Medicine 351, 1721–1730.

Sapkota, A., Buckley, T.J., 2003. The mobile source effect on curbside 1,3-butadiene, benzene, and particle-bound polycyclic aromatic hydrocarbons assessed at a tollbooth. Journal of the Air and Waste Management Association 53, 740–748.

Singh, B., Pardyjak, E.R., Brown, M.J., Williams, M.D., 2006. Testing of a Far-wake Parameterization for a Fast Response Urban Wind Model. In: Sixth Symposium on the Urban Environment/14th Joint Conference on the Applications of Air Pollution Meteorology with the Air and Waste Management Association, Atlanta, January, J8.4A, 11pp.

Tan, K.T., Lepp, N.W., 1977. Roadside vegetation: an efficient barrier to the lateral spread of atmospheric lead? Arboricultural Journal 3 (2), 79–85.

Veerabhadra Swamy, K.T., Lokesh, K.S., 1993. Lead dispersion studies along highways. Indian Journal of Environmental Health 35 (33), 205–209.

Wang, S.C., Flagan, R.C., 1990. Scanning electrical mobility spectrometer. Aerosol Science and Technology 35, 718–727.

Wilhelm, M., Ritz, B., 2003. Residential proximity to traffic and adverse birth outcomes in Los Angeles County, California, 1994–1996. Environmental Health Perspectives 111, 207–216.

Williams, M.D., Brown, M.J., Singh, B., Boswell, D., 2005a. QUIC-PLUME Theory Guide. LA-UR-04-0561.

Williams, M.D., Brown, M.J., Boswell, D., 2005b. QUIC-PLUME Advanced User's Guide. LA-UR-04-0562.

Zhu, Y., Hinds, W.C., Kim, S.K., Shen, S., Sioutas, C., 2002a. Study of ultrafine particles near a major highway with heavy-duty diesel traffic. Atmospheric Environment 36, 4323–4335.

Zhu, Y., Hinds, W.C., Kim, S.K., Sioutas, C., 2002b. Concentration and size distribution of ultrafine particles near a major highway. Journal of the Air and Waste Management Association 52, 1032–1042.

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Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): T. Bowen
7118 Trailbrook Dr
77479

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[✓] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

SCANNED ON 1/5/10
TX DOT RECEIVED DEC 17 2009 HOUSTON MAIL OPERATIONS
DEC 17 2009 HOUSTON MAIL OPERATIONS

How did you learn about this meeting:

[ ] Newspaper
[✓] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

Comments: Commissioner Morrison deserves a lot of credit for this very much improved plan for Crabb River Road + 762.

I would like to make a recommendation that you install signs prohibiting all trucks for using the turnaround at 59 & Crabb River Rd/99. The curbs, dirt & guide posts are being damaged by these vehicles that are using the turnarounds.

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed, or electronically submitted before December 28, 2009. An electronic version of the public meeting summary report will be available on TxDOT's website in early 2010.

Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

DPD

Texas Department of Transportation

Additional Comments:

Ms Theresa Bowen
7118 Trailbrook Dr
Sugar Land TX 77479-6210

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

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Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): CRABB RIVER MINI STORAGE
P.O. BOX 1270 #108, S.L. TX 77469
Ste 600

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

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[ ] Residential property owner or renter
[✓] Business property owner or lessee
[✓] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[✓] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

Comments: (1) NO LEFT TURNS GOING SOUTHBOUND OFF 59 & FORCING A UTURN @ SANDSBURY UNPRACTICAL.
(2) IF GRAND PARKWAY IS A REALITY, DO LEG FROM 59 TO SANDSBURY AS PLANNED BY GRAND PARKWY SO NOT TO NEED TO TEAR UP + REDO AGAIN
(3) MORE THAN ONE ENTRY/EXIT POINT FOR THE NEW JR + SR H. SCHOOLS OTHERWISE COME 3:00 P.M EVERY SCHOOL DAY WILL BE A MESS!

Please make additional comments on the back.

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Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
houstonwebmail@dot.state.tx.us

SCANNED ON 1/5/10
DEC 21 2009
MAIL OPERATIONS HOUS

Tx DOT RECEIVED
DEC 21 2009
HOUSTON MAIL OPERATIONS

MDM

Texas Department of Transportation

THE STATE OF TEXAS
FORT BEND COUNTY

Additional Comments:

Crabb River Mini Storage, Ltd.
1270 Crabb River Rd. Ste. 600
PMB# 108
Richmond, Tx 77469

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS · FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): _____

_____

_____

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[X] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below) _____

How did you learn about this meeting:

[ ] Newspaper [X] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

_____

Comments: We attended the public meeting on the 10th of December and found the information to be very informative. The individuals working at the event were attentive and answered our questions. The County Commissioner Richard Morrison is to be commended for his efforts to provide our communities with the expansion needed with as little intrusion environmentally as possible. The overpass at over the railroad tracks is a must for our school children. This plan is a lot more sensible than the Segment C toll road previously offered.

Please make additional comments on the back.

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Email:
hou-pioweb mail@dot.state.tx.us

SCANNED ON 1/5/10

Tx DOT RECEIVED DEC 22 2009 HOUSTON MAIL OPERATIONS

DEC 23 2009 MAIL OPERATIONS HOU

OPD

Texas Department of Transportation

THE STATE OF TEXAS
FORT BEND COUNTY

Additional Comments: We attended all of the Grand Parkway Association meetings and found the TxDot folks and associates at the Dec 10th meeting to be a lot more friendly and willing to listen to suggestions. The GP Association representatives were unfriendly and were uncompromising in their position on A project few in our communities supported. Thanks Again for this meeting. I am a writer for the Greentwood News as well as a member of the Editorial Committee, and we are doing very favorable articles for this expansion

John W Bowen
7118 TRAILBROOK DRIVE
SUGAR LAND, TX 77479

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

77251-1386

Texas Department of Transportation

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FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS · FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Jorge Martinez JR.
1534 Brazos Gate Dr.
Richmond TX 77469--

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[√] Residential property owner or renter
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[ ] Highway user
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P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 157 between Greatwood Knoll and Tara drive signal lights. On the east side of FM2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and a medical facility. These developments are going to be adversely affected by the lack of this turn break.

Community residents from Greatwood, Canyon Gate, River park, and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a u-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay, and a traffic line at the signal light, for the above neighborhoods, but for the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn.

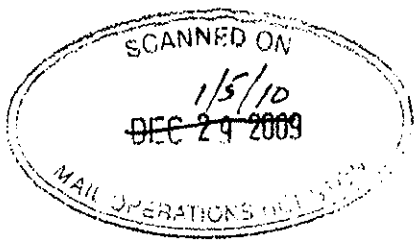
We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn. To the left going south bound on this road.

As a community resident, tax payer, and daily user of this road, I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.

Thank you in advance.

Jorge Martinez JR.—

Jorge Martinez J.R.—



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December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): SOFIA MARTINEZ
1603 PRO202 Cate Dr
Richmond, TX. 77469

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SOFIA MARTINEZ

Sofia Martinez

Texas Department of Transportation

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FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Sofia Tait
1534 Brazos Gate Dr.
Richmond, TX 77469

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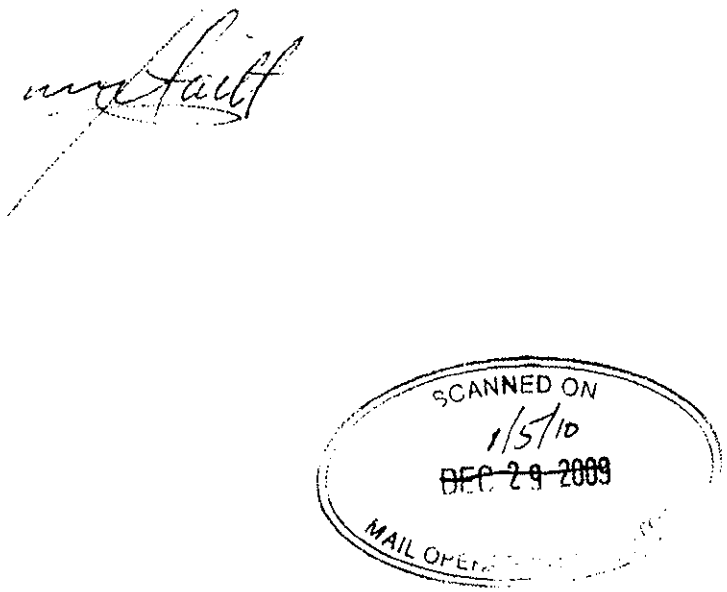
Thank you in advance.

Sofia Tarff



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Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Haydee Kalil
1605 Brazos Gate Dr.
Richmond, Tx 77469

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[✓] Residential property owner or renter
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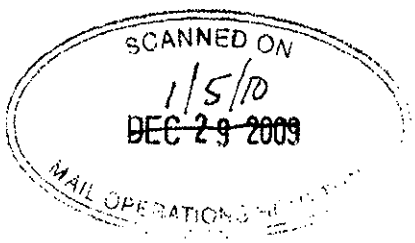
Thank you in advance.

Haydee Kalil

Haydee Kalil



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Name and Mailing Address (Optional): _____

_____

_____

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Thank you in advance.

Javier Cruz

Texas Department of Transportation

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Texas Department of Transportation
P.O. Box 1386
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Name and Mailing Address (Optional):

Jemma Kahl
1602 Briggs Gates Dr Richmond TX 77406

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[✓] Residential property owner or renter
[ ] Business property owner or lessee
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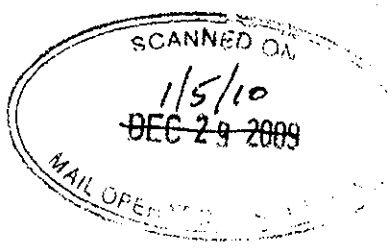
Johanna Kohl



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Name and Mailing Address (Optional): Jorge Martinez
1603 Brazos Gate Dr.
Richmond TX 77469

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Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 157 between Greatwood Knoll and Tara drive signal lights. On the east side of FM2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and a medical facility. These developments are going to be adversely affected by the lack of this turn break.

Community residents from Greatwood, Canyon Gate, River park, and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a u-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay, and a traffic line at the signal light, for the above neighborhoods, but for the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn.

We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn. To the left going south bound on this road.

As a community resident, tax payer, and daily user of this road, I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.

Thank you in advance.

Regards,
Jose Martinez

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): _____

_____

_____

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

_____

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

_____

Comments: _____

_____

_____

_____

_____

_____

_____

_____

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed, or electronically submitted before December 28, 2009. An electronic version of the public meeting summary report will be available on TxDOT's website in early 2010.

Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 157 between Greatwood Knoll and Tara drive signal lights. On the east side of FM2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and a medical facility. These developments are going to be adversely affected by the lack of this turn break.

Community residents from Greatwood, Canyon Gate, River park, and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a u-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay, and a traffic line at the signal light, for the above neighborhoods, but for the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn.

We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn. To the left going south bound on this road.

As a community resident, tax payer, and daily user of this road, I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.

Thank you in advance.

Fidel Gonzalez

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): St. Marks Episcopal Church
P O Box 1627, Richmond TX - 77406
Phone # 281 - 545 - 1661

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[X] Other (please explain below)
St. Marks Epis. Church

How did you learn about this meeting:

[X] Newspaper [ ] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

Comments: #1 Build Turn lanes at approximately 244 median at entrance to St. Marks Episcopal Church and Allied Concrete office.

#2. Extend existing driveway to meet new road that is approx. 250' south of main entrance to St. Marks Episcopal Church.

Please make additional comments on the back.

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

SCANNED ON 1/5/10 DEC 29 2009

TX DOT HOUSTON MAIL ROOM

NAN

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Alicia M. Aquilar
5940 Coral Reef Ln.
Richmond, TX 77469

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[X] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[X] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

Comments: Dear Sirs, I would kindly like to request an interupted median in front of my property located on the east side of C. River Rd at approx. sect. 157, between Greatwood Knoll & Fara Dr. I am building a private school and the residents from Greatwood, Canyon Gate and beyond 59 need to have uninterupted acces when turning left (south bound) into ~~our~~ my school. Thank you in advance for considering this impostant aspect of my business. when building the road.

Please make additional comments on the back.

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
~~TxDOT~~pioweb mail@dot.state.tx.us

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): KHOA VO
5907 CORAL PETAL LANE 504-908-9084
RICHMOND, TX 77469

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[X] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper [X] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

Comments: The purpose of this letter is to request a median break at station 157 of the expansion project. A break in the meadian will enable me to safetly turn into a povate school being built on the east side of Crabb River Rd. This break would allow south bound drivers on CRRd. uninterrupted access to a povate school and other businesses. As a resident of Canyon Gate in order to arrive at the school I would have to make a U turn at Tara Dr., causing traffic delays and creating a dangerous situation. Thank you for seriously considering this petition.

Please make additional comments on the back.

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

SCANNED ON
1/5/10
DEC 29 2009
MAIL OPERATIONS HOUSTON

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Daniel Foster
1034 RiverChase DR.
Richmond TX 77469 281-841-0274

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[X] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper [X] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

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Please make additional comments on the back.

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

SCANNED ON DEC 29 2009
1/5/10
MAIL OPERATION

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Felton Nails
1202 Riverchase Dr.
Richmond, TX. 77469 (281) 344-9650

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[X] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[X] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

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Please make additional comments on the back.

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

SCANNED ON
~~DEC 29 2009~~
1/5/10
MAIL OPENING

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):
April Wells
15903 Coral petal Lane, Richmond, Tx 77469

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[X] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[X] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
houpldwebmail@dot.state.tx.us

SCANNED On
1/5/10
DEC 29 2009
MAIL OPERATIONS HOUSTON

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):

THEODORE JONES
5910 CORAL POINT LANE 281-341-0818

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[X] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper [X] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-pjowebmail@dot.state.tx.us

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Joel & Margaret Salas
5902 Coach Patel Ln
Richmond, TX 77469

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[X] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

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[ ] TxDOT Website
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Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

SCANNED ON
DEC 29 2009
1/5/10
MAIL OPERATIONS HOUSTON

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Shari Foster
1034 RiverChase DR. ~~Rose~~ Richmond Tx 77469
713-201-0389

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[X] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
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Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-pio@txdotmail@dot.state.tx.us

SCANNED ON
DEC 29 2009
MAIL OPERATIONS HOUSTON

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): ANDRES VAZQUEZ
13115 CARVEL LN
HOUSTON TX 77072

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[✓] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper [✓] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

Comments: The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in Section 1ST between Greatwood Knoll and Tara drive signal lights. On the east side of FM 2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and medical facility. These developments are going to be adversely affected by the lack of this turn break. Community residents from Greatwood, Canyon Gate, River →

Please make additional comments on the back.

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-plowebmail@dot.state.tx.us

SCANNED ON DEC 29 2009 1/5/10 MAIL OPERATIONS HOUSTON

HOUSTON MAIL

Texas Department of Transportation

THE STATE OF TEXAS FORT BEND COUNTY

Additional Comments: park, and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a u-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay, and a traffic line at the signal light, for the above neighborhoods, but for the the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn. We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn. To the left going south bound on this road. As a daily user of this road, and tax payer I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.

Thank you in advance
Andres Vazquez

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Fachad Tajmirriahi
12913 Blackbrook Ln
Hou Tx 77044

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[✓] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper [✓] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

Comments: The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 157 between Greatwood Knoll and Tara drive signal light. on the east side of FM 2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and medical facility. These developments are going to be adversely affected by the lack of this turn break →

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

SCANNED ON 1/5/10
DEC 29 2009
MAIL OPERATIONS HOUSTON

Texas Department of Transportation

THE STATE OF TEXAS FORT BEND COUNTY

Additional Comments: Community residents from Greatwood Canyon Gate, Riverpark and the general traffic heading South bound to these businesses will now find themselves stuck at the Tara traffic light to make a u-turn to reach the east side of the road. This is not logical as not only will is create a hassle delay and a traffic line at the Signal light for the above neighborhoods, but for the Resident of Tara Subdivision that now are stuck behind the vehicles trying to make a slow u-turn. We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better Known as a button hook turn to the left going south bound on this road. As an owner of the parcel of land affected, tax payer, and daily user of this road, I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.
Thank you in advance.
Farhad Tajmirrahi
Farhad Tajmirrahi PE

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Sandra Flores
1011 Langdon Ln
Hou Tx 77012

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[✓] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper [✓] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

Comments: The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in Section 157 between Greatwood Knoll and Tara drive signal lights. On the east side of FM 2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and medical facility. These developments are going to be adversely affected by the lack of this turn break. Community residents from Greatwood, Canyon Gate, River →

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

SCANNED ON 1/10/10
DEC 29 2009
MAIL OPERATIONS

TXDOT
HOUSTON MAIL OPERATIONS

Texas Department of Transportation

THE STATE OF TEXAS FORT BEND COUNTY

Additional Comments: park, and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a u-turn to reach the east side of the road. This is not logical as not only will it create a massive delay, and a traffic line at the signal light, for the above neighborhoods, but for the the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn. We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn. To the left going south bound on this road. As a daily user of this road, and tax payer I urge you to strongly consider my feedback in to this project as there are multiple communities that are being affected.

Thank you in advance
Sandra Flores.
Sandra Flores.

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):

Parvin Sabernejad
12915 Blackbrook Ln.
Ho Tx 77041

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[✓] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[✓] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

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Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email: houprjdevelopmail@dot.state.tx.us

SCANNED ON DEC 29 2009 1/5/10 MAIL OPERATIONS HOUSTON

TxDOT RECEIVED HOUSTON MAIL OPERATIONS

Texas Department of Transportation

THE STATE OF TEXAS FORT BEND COUNTY

Additional Comments: Community residents from Greatwood Canyon Gate, Riverpark and the general traffic heading South bound to these businesses will now find themselves stuck at the Tara traffic light to make a u-turn to reach the east side of the road. This is not logical as not only will is create a hassle delay and a traffic line at the signal light for the above neighborhoods, but for the Resident of Tara Subdivision that now are stuck behind the vehicles trying to make a slow u-turn, we urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn to the left going south bound on this road. As an owner of the parcel of land affected, taxpayer, and daily user of this road, I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.

~~Thank you in advance.~~

Parvin Sabernejad

~~Parvin Sabernejad~~

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS · FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Parvaneh Sabernejad
4419 Canadian River Rd
~~Hou~~ Sugarland Tx 77478

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[✓] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[✓] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

Comments: The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 1st between Greatwood Knoll and Tara drive signal lights. On the east side of FM 2759 a 20 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and medical facility. These developments are going to be adversely affected by the lack of this turn break. Community residents from Greatwood, Canyon Gate, River →

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed, or electronically submitted before December 28, 2009. An electronic version of the public meeting summary report will be available on TxDOT's website in early 2010.

Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email: hou-piowebmail@dot.state.tx.us

SCANNED ON ~~DEC 2 9 2009~~ 1/5/10 MAIL OPERATIONS

TX DOT RECEIVED HOUSTON MAIL OPERATIONS

Texas Department of Transportation

THE STATE OF TEXAS FORT BEND COUNTY

Additional Comments: park, and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a u-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay, and a traffic line at the signal light, for the above neighborhoods, but for the the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn. We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn. To the left going south bound on this road. As a daily user of this road, and tax payer I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.

Thank you in advance
parvaneh sabernejad

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):

San Carlos Khalil - 6406 Canyon Point Ln
Richmond TX 77469
Crabb River Rd
Sugar Land TX
77479

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[✓] Residential property owner or renter
[✓] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

_____

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

_____

Comments: _____

Please make additional comments on the back.

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-pioweb mail@dot.state.tx.us

5

The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 157 between Greatwood Knoll and Tara drive signal lights. On the east side of FM2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and a medical facility. These developments are going to be adversely affected by the lack of this turn break.

Community residents from Greatwood, Canyon Gate, River park, and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a u-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay, and a traffic line at the signal light, for the above neighborhoods, but for the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn.

We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn. To the left going south bound on this road.

As an owner of the parcel of land affected, tax payer, and daily user of this road, I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.

Thank you in advance,

JUAN CARLOS GALLI

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):

Samantha Allende 6406 Canyon Point Ln
Richmond TX 77469

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[✓] Residential property owner or renter
[✓] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

_____

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

_____

Comments:

_____

_____

_____

_____

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_____

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_____

Please make additional comments on the back.

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Mail to:
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Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

4

The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 157 between Greatwood Knoll and Tara drive signal lights. On the east side of FM2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and a medical facility. These developments are going to be adversely affected by the lack of this turn break.

Community residents from Greatwood, Canyon Gate, River park, and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a u-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay, and a traffic line at the signal light, for the above neighborhoods, but for the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn.

We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn. To the left going south bound on this road.

As an owner of the parcel of land affected, tax payer, and daily user of this road, I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.

Thank you in advance.

Samantha Allende

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Elisa Aguilar
5906 Coral Petal Ln.
Richmond, TX 77469

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[X] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

Comments: Dear Sirs, I would kindly like to request an interupted median in front of my property located on the east side of Crab Rv. Road. at approximately Sect. 157, between Great Wood Knoll and Tara Dr. My close ones have invested a lot of hard work and money into the new business being developed on that road. By making it easier to access this property, future patrons can arrive safely at our business.

Please make additional comments on the back.

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
houpiowebmail@dot.state.tx.us

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MAIL OPENING

This will also enable our business to succeed and have a positive impact on the community. Thank you for taking this petition into serious consideration.

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Ruben Aguilar
5906 Coral Petal Ln.
~~La~~ Richmond, TX. 77469

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[X] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[X] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

Comments: Dear Sirs,

My wife and I, along with 3 other couples, have invested our life savings into building a private school on Crabb River Rd. (east side) at approx. sect. station 157. We would like to request an interrupted median acces to our facility. We are scheduled to open late Spring 2010. Our future patrons will need uninterupted access to our drive way when southbound on FM2759..

more on back..

Please make additional comments on the back.

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
houpplowebmail@dot.state.tx.us

A median break is crucial, ~~for~~ without it, our busine will be adversely affected, compromising our investme and the future well being of our family.

Also,
Without this median break, our customers would have to travel to the next light @ Tara Dr. and make a U-turn, causing traffic jam; delays and hazardous situations.

Thank you in advanced for your consideration and hopefully our request is granted. This is a very important factor that will ensure we have a successful school.

Sincerely
RAG-'L

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):

Rocio Dazu 4502 Hope Ridge Ln Richmond, Tx- 77469

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[✓] Residential property owner or renter
[ ] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

_____

How did you learn about this meeting:

[ ] Newspaper [ ] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

_____

Comments:

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
~~hou-pd~~ webmail@dot.state.tx.us

SCANNED BY
1/5/10
~~DEC 29 2009~~
MAIL OPERATIONS HOUSTON

The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 157 between Greatwood Knoll and Tara drive signal lights. On the east side of FM2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and a medical facility. These developments are going to be adversely affected by the lack of this turn break.

Community residents from Greatwood, Canyon Gate, River park, and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a u-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay, and a traffic line at the signal light, for the above neighborhoods, but for the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn.

We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn. To the left going south bound on this road.

As a community resident, tax payer, and daily user of this road, I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.

Thank you in advance.

Rocio Deza

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):

Mohammed R. Baradaran
13827 Walnut Hollow Ln. Houston, TX 77082

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[✓] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

_____

How did you learn about this meeting:

[ ] Newspaper
[✓] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

_____

Comments: The Purpose of this comment letter is to bring to your Attention The Lack of a turn break in the Purposed FM 2759 expansion in Section 157 between Greatwood Knoll & Tara Drive Signal lights. on the eastside of FM 2759 a 2.0 & a 2.5 acre commercial Parcel of Land that as this letter is being written, is being Developed into a Private School and a medical facility. These developments are going to be adversely effected by the Lack of this turn break.

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed, or electronically submitted before December 28, 2009. An electronic version of the public meeting summary report will be available on TxDOT's website in early 2010.

Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

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1/5/10
~~DEC 28 2009~~
MAIL OPERATIONS HOUSTON

Tx DOT
RECEIVED
HOUSTON MAIL OPERATIONS

020

Texas Department of Transportation

THE STATE OF TEXAS FORT BEND COUNTY

Additional Comments: Community residents from Greatwood, Canyon Gate, River Park & the general traffic heading South bound to these businesses will now find themselves stuck at the Tara traffic light to make u-turn to reach the east side of the road. This is not Logical as not only will creat a hassle, delay and a traffic line at the signal light, for the above neighborhoods, but for the residents of Tara Subdivision that now ar stuck behind the vehicles trying to make a slow u-turn. We urge you to consider a full turn break infront of these two parcels of land. At the very least, a left only turn or better known as a button hook turn to the Left going South bound on this road.

As a past owner of the Parcel of Land affected, and tax Payer, I I urge You to strongly consider my feed back into this Project as there are multiple communities that are being affected.

Thank You in advance.

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): Mandana Baradaran
13827 Walnut Hollow Ln. Houston Tx. 77082

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[✓] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper [✓] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

Comments: The Purpose of this comment letter is to bring to your Attention the Lack of a turn break in the Purposed FM 2759 expansion in Section 152 between Greatwood Knoll & Tara Drive S. and lights on the eastside of FM 2759 a 2.0 & a 2.5 acre commercial Parcel of Land that as this letter is being written, is being Developed into a Private School and a medical facility. These developments are going to be adversely effected by the Lack of this turn break.

Please make additional comments on the back.

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Email:
hou-piowebmail@dot.state.tx.us

Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

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MM

Texas Department of Transportation

Additional Comments: community residents from Greatwood, Canyon Gate, River Park & the general traffic heading South bound to these businesses will now find themselve stuck at the Tara traffic light to Make u-turn to reach the east side of the road. This is not Logical as not only will creat a hassle, delay and a traffic line at the signal light, for the above neighborhoods, but for the residents of Tara subdivision that now ar stuck behind the vehicles trying to make a slow u-turn. We urge you to consider a full turn break infront of these two Parcels of land. At the very least, a left only turn or better known as a button hook turn to the Left going South bound on this road.

As a community Part owner of the Parcel of land affected and Tax Payer, I urge you to strongly consider my feed back into this project as there are multiple communities that are being affected.

Thank You in advance

Mandana Baradaran

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):

Kaurosh Daulati
daulati@sbcglobal.net

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[✓] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[✓] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

Comments: The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 157 between Greatwood Knoll & Tara drive signal lights. On the east side of FM2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and a medical facility. These developments are going to be adversely affected by the lack of this turn break.

continue →

Please make additional comments on the back.

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

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TX DOT RECEIVED DEC 23 2009 HOUSTON MAIL OPERATIONS

Texas Department of Transportation

Additional Comments: Community residents from Greatwood, Canyon Gate, River Park and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a U-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay and a traffic line at the signal light, for the above neighborhoods, but for the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn.

We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn, to the left going south bound on this road.

As an owner of the parcel of land affected, tax payer, and daily user of this road, I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.

Thank you in advance

Kourosh Daulati
daulat. @sbcglobal .net.

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS · FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):

Ana Doulati
3126 Natalias
Houston, Tx. 77082

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[✓] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[✓] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

Comments: The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 157 between Greatwood knoll & Tara drive signal lights. On the east side of FM2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and a medical facility. These developments are going to be adversely affected by the lack of this turn break.

continue →

Please make additional comments on the back.

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
houmowebmail@dot.state.tx.us

SCANNED ON 1/5/10
MAIL OPERATIONS HOUSTON

TX DOT RECEIVED
DEC 23 2009
HOUSTON MAIL OPERATIONS

nov

Texas Department of Transportation

THE STATE OF TEXAS · FORT BEND COUNTY

Additional Comments: Community residents from Greatwood, Canyon Gate, River Park and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a U-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay and a traffic line at the signal light, for the above neighborhoods, but for the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn.

We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn, to the left going south bound on this road.

As an owner of the parcel of land affected, tax payer, and daily user of this road, I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.

Thank you in advance Ana Boulati

3126 Natalias
Houston, Tx. 77082

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):
Lupita Guerra

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[✓] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[✓] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

Comments: The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 157 between Greatwood knoll & Tara drive signal lights. On the east side of FM2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and a medical facility. These developments are going to be adversely affected by the lack of this turn break.

continue →

Please make additional comments on the back.

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Email:
houpiowebmail@dot.state.tx.us

Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

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MAIL OPERATIONS HOUSTON
1/5/10
TxDOT RECEIVED DEC 23 2009 HOUSTON MAIL OPERATIONS

DRO

Texas Department of Transportation

THE STATE OF TEXAS
FORT BEND COUNTY

Additional Comments: Community residents from Greatwood, Canyon Gate, River Park and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a U-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay and a traffic line at the signal light, for the above neighborhoods, but for the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn.

We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn, to the left going south bound on this road.

As a daily user of this road, I urge you to strongly consider my feedback into this project.

Lupita Guerra

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):

Jesus Lara
9449 Briar Forest.
Houston Tx. 77063

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[✓] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper [✓] Letter [ ] TxDOT Website
[ ] Other (Please Explain)

Comments: The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 157 between Greatwood knoll & Tara drive signal lights. On the east side of FM2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and a medical facility. These developments are going to be adversely affected by the lack of this turn break.

continue →

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed, or electronically submitted before December 28, 2009. An electronic version of the public meeting summary report will be available on TxDOT's website in early 2010.

Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
houston_pio@dot.state.tx.us

non

Texas Department of Transportation

THE STATE OF TEXAS · FORT BEND COUNTY

Additional Comments: Community residents from Greatwood, Canyon Gate, River Park and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a U-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay and a traffic line at the signal light, for the above neighborhoods, but for the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn.

We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn, to the left going south bound on this road.

As a daily user of this road, and tax payer, I urge you to strongly consider my feedback into this project as there are multiple communities that are being afferted.

Jesus Lara
9449 Briar Forest.
Houston, Tx. 77063

Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

CSJ: 1415-03-010 & 0543-03-067.cb

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional):
Laura Melcón

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[ ] Business property owner or lessee
[✓] Highway user
[ ] Other (please explain below)

How did you learn about this meeting:

[ ] Newspaper
[✓] Letter
[ ] TxDOT Website
[ ] Other (Please Explain)

Comments:

Please make additional comments on the back.

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Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-plowtalk@dot.state.tx.us

SCANNED
DEC 23 2009
1/5/10
MAIL OPERATIONS HOUSTON

Tx DOT RECEIVED
DEC 23 2009
HOUSTON MAIL OPERATIONS

NAN

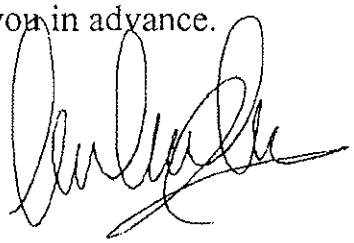
The purpose of this comment letter is to bring to your attention the lack of a turn break in the proposed FM 2759 expansion in section 157 between Greatwood Knoll and Tara drive signal lights. On the east side of FM2759 a 2.0 & 2.5 acre commercial parcel of land that as this letter is being written, is being developed into a private school and a medical facility. These developments are going to be adversely affected by the lack of this turn break.

Community residents from Greatwood, Canyon Gate, River park, and the general traffic heading south bound to these businesses will now find themselves stuck at the Tara traffic light to make a u-turn to reach the east side of the road. This is not logical as not only will it create a hassle, delay, and a traffic line at the signal light, for the above neighborhoods, but for the residents of Tara subdivision that now are stuck behind the vehicles trying to make a slow u-turn.

We urge you to consider a full turn break in front of these two parcels of land. At the very least, a left only turn or better known as a button hook turn. To the left going south bound on this road.

As a daily user of this road, and tax payer I urge you to strongly consider my feedback into this project as there are multiple communities that are being affected.

Thank you in advance.



Laura Melcon

Texas Department of Transportation

PUBLIC MEETING COMMENT FORM
CRABB RIVER ROAD (FM 2759/762): FROM US 59 TO LCISD COMPLEX
FORT BEND COUNTY, TEXAS
December 10, 2009

THE STATE OF TEXAS · FORT BEND COUNTY

Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Name and Mailing Address (Optional): _____

_____

_____

PLEASE COMPLETE THE APPROPRIATE ITEMS BELOW:

I am primarily interested in the project from the standpoint of (Please Check One):

[ ] Residential property owner or renter
[X] Business property owner or lessee
[ ] Highway user
[ ] Other (please explain below) _____

How did you learn about this meeting:

[ ] Newspaper
[X] Letter
[ ] TxDOT Website
[ ] Other (Please Explain) _____

Comments: I believe the best way to move more traffic would be to make Crabb River Rd 3 lanes of traffic each way (6 lanes total) with a center turn lane for divided. A raised divided lane will restrict entrances to businesses along Crabb River Road

_____

_____

Please make additional comments on the back.

These comment forms can be turned in tonight, mailed, or electronically submitted before December 28, 2009. An electronic version of the public meeting summary report will be available on TxDOT's website in early 2010.

Mail to:
Director of Project Development
Texas Department of Transportation
P.O. Box 1386
Houston, Texas 77251-1386

Email:
hou-piowebmail@dot.state.tx.us

Appendix D
Sign-in Sheets

Texas Department of Transportation

Open House/Public Meeting Sign-In

(Please sign in to be added to our program mailing list)

Thursday, December 10, 2009
River Point Community Church – 5000 Ransom Road
6:00 p.m. to 8:00 p.m.

(ELECTED OFFICIALS)

NAME / ELECTED OFFICE (Please Print)	ADDRESS	CITY/ZIP	EMAIL ADDRESS	PHONE NUMBERS
John Doe / Commissioner	5555 Smith Street #106	Richmond, TX 77469	johndoe@email.net	(555) 777-9999 (direct)
Richard Morrison / Commissioner Pct 1	1517 Eugene Heimann Cir, #306	Richmond, TX 77469	richard.morrison@co.fort-bend.tx.us	281-344-9400
Jim Gonzalez / Comm Pct 3 City of Rich	1803 Huisache Drive	"	jimgonzalez@sbcglobal.net	281 633 0015

Texas Department of Transportation

Open House/Public Meeting Sign-In

(Please sign in to be added to our program mailing list)

Thursday, December 10, 2009
River Point Community Church – 5000 Ransom Road
6:00 p.m. to 8:00 p.m.

NAME / BUSINESS AFFILIATION (Please Print)	ADDRESS	CITY/ZIP	EMAIL ADDRESS	PHONE NUMBERS
John Doe / Fort Bend County	5555 Smith Street	Richmond, TX 77657	johndoe@email.net	(555) 777-9999 (phone)
Medward R. Kitar	711 Crabb River Rd	Richmond Tx 77469		281-342-3007
Rolando Adamson	215 Moorton	Richmond, TX 77469		(281) 342-6109
Stan Wilkening	1519 Goodnight Ct.	Sugar Land Tx		713 3043247
Mark S. Roux	6319 Brinkerhoff Dr	Richmond 77469	msroux@comcast.net	281-341-5444
Bernie Fredregill	1708 Cedar Dr	Richmond, 77469	bwTeam@comcast.net	281-344-8183
Cyndi Carle	1203 Seco Mines Ln	Richmond, 77469	carlecr@hmresources.com	281-633-0511
Richard A. Vacek	7719 Shady Way Dr	Sugarland 77479		281-541-9863
Diane Cierzniewski	6803 Knoll Park	Sugar Land 77479		281-343-1029

Texas Department of Transportation

Open House/Public Meeting Sign-In

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Thursday, December 10, 2009
River Point Community Church – 5000 Ransom Road
6:00 p.m. to 8:00 p.m.

NAME / BUSINESS AFFILIATION (Please Print)	ADDRESS	CITY/ZIP	EMAIL ADDRESS	PHONE NUMBERS
John Doe / Fort Bend County	5555 Smith Street	Richmond, TX 77657	johndoe@email.net	(555) 777-9999 (phone)
Anne Hoelscher / Brookwood	6110 Millstead Ct	Richmond TX 77469	ahoelscher@comcast.net	281-341-1058
Patrick Batchelor	14100 3rd St.	Rosenberg, Tx 77471	patrick.batchelor@txdot.gov	
Darrell Harris / Contractor	1214 magnolia Wave Ct	Sugar Land, TX 77479	harrisdd@earthlink.net	

Texas Department of Transportation

Open House/Public Meeting Sign-In

(Please sign in to be added to our program mailing list)

Thursday, December 10, 2009
River Point Community Church – 5000 Ransom Road
6:00 p.m. to 8:00 p.m.

NAME / BUSINESS AFFILIATION (Please Print)	ADDRESS	CITY/ZIP	EMAIL ADDRESS	PHONE NUMBERS
John Doe / Fort Bend County	5555 Smith Street	Richmond, TX 77657	johndoe@email.net	(555) 777-9999 (phone)
Kim R Janke	11508 Zimmerick Rd	Needville TX 77461	RJanke@consolidated.net	979-793-6704
Millicent Sims	902 Kings Forest Ln	Richmond, TX 77469		
David Britain	1150 Oak Glen Ln	Sugar Land TX 77479	dave.britain@sbcglobal.net	281-345-8406
Danny F Marek	505 Cedar Rivers Rd	Richmond Tx 77469	dmarek@hughes.net	281-342-1723
Edwin Marek	777 " " "	" " "	" "	281 232-4495
Jim Hoare	1415 AZALEA BEND	SUGAR LAND, TX 77479	J.a.Hoare@sbcglobal.net	281 545 1603
Jerry Hall	8714 Cedar Lane	RICHMOND TX		
Brandt Mannchen	5431 Carew	Houston TX	brandtsharfhat@juno.com	713-664-5962
Joe Norrell	1506 Stonerail	S. L. TX	jn1506@sbcglobal.net	281/343-0825
Pam Cortes	6311 Bridlewood	Richmond Tx 77469	eulpec@yahoo.com	713-301-1574

Texas Department of Transportation

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John Doe / Fort Bend County	5555 Smith Street	Richmond, TX 77657	johndoe@email.net	(555) 777-9999 (phone)
FRANKLIN SCHODEK	2104 DOWLING	RICHMOND	schodek@yahoo.com	281.232.3400
James Bairrington			JdBairrington@Deprilsting	281-808-6524
VICTOR CORDOVA	6911 RUSTLING OAKS	Richmond	cordova2003@comcast.net	(281) 232-5047
Ruben Aguilar	5906 Coral Petal Ln	Richmond 77469		(713) 703 7782
Sid Smith	1428 Crab River Rd	Richmond Tx 77469	sid.smith.obmy@statefarm.com	281 242 5140
TED TANKARD	10218 READING RD	RICHMOND 77469	TANK10218@YAHOO.COM	713-206-9914
ALLEN TANKARD	"	"	"	"
RANDY DLUHY	1517 EUGENE HEIMANN CIRCLE	RICHMOND TX 77469	DLUHY RAN@CO.FORT-BEND.TX.US	281 341 4536
BARRY Nicholson	1407 STONE HARBOR	SUGARLAND 77479	Bnicholson1@SLB.com	832 444 4440
Jack Molho	7810 Silent Forest	SL 77479	J.Molho@comcast	832 279034

Texas Department of Transportation

Open House/Public Meeting Sign-In

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NAME / BUSINESS AFFILIATION (Please Print)	ADDRESS	CITY/ZIP	EMAIL ADDRESS	PHONE NUMBERS
John Doe / Fort Bend County	5555 Smith Street	Richmond, TX 77657	johndoe@email.net	(555) 777-9999 (phone)
Mike Batchelor	823 Bent Knoll	Sugar Land		
FRANK PRICE	7907 HEATHER DALE	S. L. 77479		281-437-[illegible]
Brent Burckart Cornerstone Community Bible Church	10701 Corporate Drive, #172 [illegible]	Stafford 77477	burckartb@sbcglobal.net	281-313-8560
Roberta Terrell	7215 Windwood	Sugar Land 77479	robertaterrell@gmail.com	
Cliff "	"	"	"	
Betty J Vacek	7719 Shady Way	Sugar Land, TX 77479		
Michael Lis	1319 Berry Tree Dr	Sugarland Tx 77479	lisent66@hotmail.com	713-249-9672

Texas Department of Transportation

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John Doe / Fort Bend County	5555 Smith Street	Richmond, TX 77657	johndoe@email.net	(555) 777-9999 (phone)
Brent Lapsley	2501 Central Pkwy	Houston, Tx 77092	brent@paradigmconsult	a-ts.com 713-686-6771
Dwayne Dawlearn	1817 McKinley	Rosenberg 77471	DAWLEARN@dot.state.tx.us	281-342-2429
Thuan Bonnie	711 Tennessee St	S.L. TX 77479		
Scott Barnett	6603 Springcrest Dr	Sugar Land TX 77479	scbarnett-76112@yahoo.com	
JRay Nixon	1406 Honeytree Dr	" " "	JNixin6@comcast.com	713-825-7600
Tony Vetterkind	1206 Point Gibson Ct	Richmond 77469	Tony.Vetterkind@txdot.gov	281-239-1324
Robin Wilborn	111 Willoughby Ct.	Richmond 77469		281-386-8108
JAY FARRIS	1606 CRABB RIVER	RICHMOND 77469	JAY@AUTOTECHNOLOGIES.NET	281-804-6311
Bill Shelton	7314 Springdale Dr	Sugar Land 77479		
Michael Deborah	1902 Silver Pond Ct.	Sugar Land 77479		281987-0939

Texas Department of Transportation

Open House/Public Meeting Sign-In

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John Doe / Fort Bend County	5555 Smith Street	Richmond, TX 77657	johndoe@email.net	(555) 777-9999 (phone)
LAWRENCE STASZAK	GALL BRIDGEWOOD DR	RICHMOND TX 77469	Lstaszak@comcast.net	281-342-5930
MARY DOETTERL				
Tim Kracker	6802 High Knoll Dr.	Sugar Land, Tx 77479		281-937-9592
MANNY FRANCIPA	TXDOT	HOUSTON, TX		713-802-5750
GARY ALLMAN	9002 Markum ct	Richmond Tx 77469		281 545-2556
Mary / Charles Titos	822 Royal Lakes	" " 77469		281-799-4354
Stacy Lammers	103 Wilkinghill Ct	Richmond, TX 77469	slammers_2005@yahoo.com	832-541-2882
Margaret Wilkening	1519 Goodwood ct	Sugarland Tx 77479		
Shoukat Dhanani	6671 S.W Fwy #440	HOU Tx 77074	SDHANANI@HULSHANINC.com	713-776-1515 x20
Zen Zheng	2915 Park Springs Ln	Sugar Land, 77479	zen.zheng@chron.com	713-582-4722

Texas Department of Transportation

Open House/Public Meeting Sign-In

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John Doe / Fort Bend County	5555 Smith Street	Richmond, TX 77657	johndoe@email.net	(555) 777-9999 (phone)
Mike Stone	P.O. Box 546	Richmond Tx 77406	mikestone@cpmguru.com	281/201-4301
Bob Arroyave	12003 Castlebell Bay	Houston, TX 77041	barroyave@brwarroyave.com	281/558-8700
MATT COYLE	1301 W LAUREL OAKS	RICHMOND 77469		281 232 9522
Bill Jamison	83 San Marino SL	S.L 77478	bill.j@sjinterests.com	281-659-9400
Sid Seth	3015 THE HIGHLANDS Dr. Sugar Land Tx. 77479		sidhuanto seth@hotmail	713 554 5718
Gail Turner	3010 Pisces St Richmond Tx	Richmond TX	MGBet@earthlink.net	713-508-7216
RON McCANN	7414 GRAMMONS LAKE DR	SL 77479	RONMCCANN@AOL.com	713-594-3331
Mahmoud Saleh	12822 SKYLINE DR		msaleh@cobbfen.com	713-462-3262
Don Munsch c/o Fort Bend Herald	1902 Fourth St	Rosenberg TX 77471	dmunsch@fbherald.com	281-342-4474
Joe F. Lee	6609 Dutch John Circle	Richmond, TX 77469	Len Jones Co. Fort-Bend - Texas	281-937-9845

Texas Department of Transportation

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John Doe / Fort Bend County	5555 Smith Street	Richmond, TX 77657	johndoe@email.net	(555) 777-9999 (phone)
Richard Fields	32 Bradford Cir	Sugar Land Tx 77479	richard.fields@aguirre-t.com	281-635-3441
Ray Brown			rabrown@dcpmidstream.com	361-217-0079
Planning Mgr	2211 Highland Dr.	Sugarland TX 77479	[illegible]	281 722 1104
Robert Schilling	1403 Auburn Trls	Sugarland 77479	robt9426@[illegible]	281-343-1507
Johnny Bowen	7118 TRAILBROOK DR	Sugarland 77479	Dbowenjt5226@sbcglobal.net	281-343-8238
Donnie Chang	6830 Wilcrest	Houston, Tx 77072	donchang@sabell.net	713.939.8181
MOSES KHANO	1714 HONEYCAKE	SUGARLAND 77478	MOSESKHANO@	713-851-7419
ROBERT ELSENBERG	1942 COUNTRY CLUB	SUGARLAND TX 77478	CONCORDE@CONCORDEEQUITY.ACC.COM	713-789-3600
DAVID ROSE	111 Willoughby Ct	Richmond TX 77469	darose@lcisd.org	281 714 7749
Bob Hamm	7515 Shannondale Dr	Sugar Land TX 77479	LMGOOD@AOL.COM	281 937 0005

Texas Department of Transportation

Open House/Public Meeting Sign-In

(Please sign in to be added to our program mailing list)

Thursday, December 10, 2009
River Point Community Church – 5000 Ransom Road
6:00 p.m. to 8:00 p.m.

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John Doe / Fort Bend County	**5555 Smith Street**	**Richmond, TX 77657**	johndoe@email.net	(555) 777-9999 (phone)
Robert Cyrus	107 Willoughby Ct		Rajacyrus@gmail.com	—
TIM RICHARD	3106 LA QUINTA	MISSOURI CITY 77459		
Gloria Staszak	6211 Bridlewood Dr.	Richmond		281-342-5930
SHIV RANDHAWA	4539 PIONEER TR	SUGAR LAND		281-536-2084
Rodney Anderson	401 Cualob River	Richmond		
[illegible]	Canefield HOA		Along@HouComm.com	
BERT ROSENBERG	5851 San Felipe #500	Houston Tx 77057		713-622-0800
Larry Silverstein	7926 Heather Dale Ct	Sugar Land 77479	LSILVERSTEIN2@comcast.net	281-343-7592
Lodell Graham	6601 FM 762	Richmond, Tx	lodell@championsraising.com	281-937-0700
Charles Seiler	6507 Canyon Estates Ln	Richmond Tx	DBRACE2@MSN.com	281-239-8023

Texas Department of Transportation

Open House/Public Meeting Sign-In

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Thursday, December 10, 2009
River Point Community Church – 5000 Ransom Road
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NAME / BUSINESS AFFILIATION (Please Print)	ADDRESS	CITY/ZIP	EMAIL ADDRESS	PHONE NUMBERS
John Doe / Fort Bend County	5555 Smith Street	Richmond, TX 77657	johndoe@email.net	(555) 777-9999 (phone)
Carole Gutwolf-AHy	9002 Knightswood CT	Richmond TX 77469	CJAHarton hotmail.com	281-375-7550
Michael Stein	10311 Reading Rd	Richmond TX 77469	mhsteinengr@yahoo.com	281-455-5050
SYLVIANE HOARE	1415 AZALEA BEND	SUGARLAND	JLhoare@comcast.net	
J. B Harrison	5 Morton St Suite 389 Richmond TX 77469	Richmond 77469		713-202-2903
Brad Finch	910 Terry	S. L. Tx.	—	281-657-5169
Geri Wells	4551 Bermuda Dr	Sugar Land 77479 TX	gjwells@windstream.net	281-980-7175
Myron Franklin	1230 Brazos Riches Dr	Richmond, TX	Stopgp@tllroad.com	832-452-5200
Leslie Hauck	6501 Main St	Katy TX	lhauckel.isd.org	832-264-2320
Jason Vaughn	1124 Blume Rd	Rosenberg, TX	jason.vaughn@co.fort-bend.tx.us	281-633-7506
christy hawkins	1420 3rd st	rosenberg tx	christy@hawkins-insurance.com	281-239-6202

Appendix E
Hand-outs

NOTES:

Project information and a summary of this public meeting may be reviewed at the TxDOT office located at:

7600 Washington Avenue
Houston, Texas 77007

OR

TxDOT's website: www.dot.state.tx.us

All written comments must be postmarked or e-mailed on or before December 28, 2009.
P.O. Box 1386
Houston, Texas 77251-1386
Email: hou-piowebmail@dot.state.tx.us

Thank you for your interest in this important project.

For more information contact:

Director of Project Development
TxDOT
(713) 802-5241

PUBLIC MEETING

CRABB RIVER ROAD (FM 2759/762) Improvements

Texas Department of Transportation

THE STATE OF TEXAS · FORT BEND COUNTY ·

Proposed Improvements to Crabb River Road: From US 59 to LCISD Complex Fort Bend, County, Texas

CSJ: 1415-03-010 & 0543-03-067

Meeting Date: December 10, 2009
Meeting Time: 6:00 – 8:00 PM
Location: River Point Community Church
5000 Ransom Road
Richmond, Texas 77469

Purpose of this Meeting:

- To inform the public of the upcoming project
- To present the proposed improvements on Crabb River Road
- To provide a forum for free exchange views and concerns for proposed project
- To receive public comments

Meeting Format – Open House (No Formal Presentation):

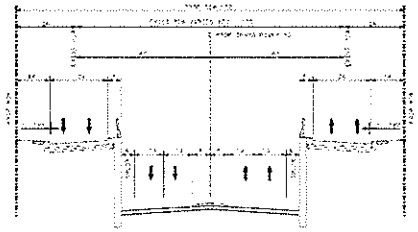
- Please sign in
- View maps and exhibits
- Ask questions
- Inform staff of issues and concerns
- Complete comment form

Project Description:

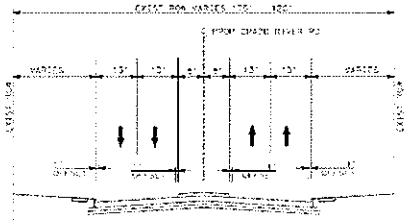
Fort Bend County and the Texas Department of Transportation (TxDOT) are proposing the widening of the existing Crabb River Road (FM 2759/762) roadway to a 4-lane divided curb and gutter roadway with underground storm sewer drainage. Project limits are from US 59 to approximately 500 feet south of the new Lamar Consolidated Independent School District (LCISD) middle school/high school complex, a distance of approximately 3.8 miles.

Project Status/Estimated Completion Dates:

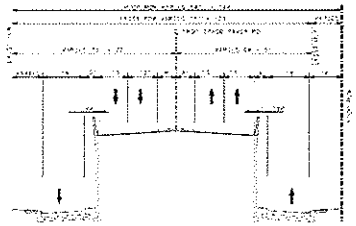
- Environmental assessment and preliminary engineering anticipated to be finalized by September 2010.
- Final design will proceed at that time.
- Construction is anticipated to begin in early 2011 and be completed by June 2012 based on funding availability.



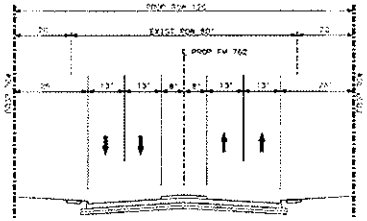
Crabb River Road (FM 2759/762)
Proposed Typical Section – at Sansbury



Crabb River Road (FM 2759/762)
Proposed typical section – south of Sansbury



Crabb River Road (FM 2759/762)
Proposed Typical Section – elevated at railroad crossing



Crabb River Road (FM 2759/762)
Proposed typical section – south of railroad crossing

NOTAS:

La información del proyecto y un resumen de esta reunión publica se podrá revisar en la oficina de TxDOT ubicada en:

7600 Washington Avenue
Houston, Texas 77007

O

TxDOT's sitio de Web: www.dot.state.tx.us

Todos los comentarios escritos deben enviarse por correo o por correo electrónico antes del 28 de diciembre 2009.
P.O. Box 1386
Houston, Texas 77251-1386
Email: hou-piowebmail@dot.state.tx.us

Gracias por su interés en este importante proyecto.

Para más información contactar:

Director of Project Development
TxDOT
(713) 802-5241

REUNION PÚBLICA

CRABB RIVER ROAD (FM 2759/762) Mejoras

Texas Department of Transportation

THE STATE OF TEXAS · FORT BEND COUNTY ·

Mejoras Propuestas a Crabb River Road: Desde US 59 hasta LCISD Complex Fort Bend, County, Texas

CSJ: 1415-03-010 & 0543-03-067

10 de diciembre, 2009
6:00 – 8:00 PM
River Point Community Church
5000 Ransom Road
Richmond, Texas 77469

Propósito de esta reunión:

- Para informar al público de el proyecto propuesto
- Para presentar las mejorarías de Crabb River Road
- Proporcionar un foro para el intercambio de ideas y opiniones del proyecto propuesto
- Para recibir comentarios del público

Reunión de formato - "Foro Libre":

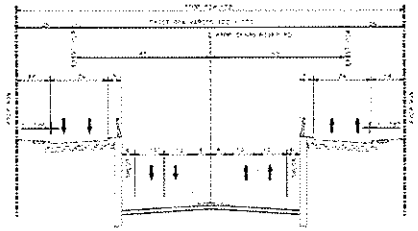
- Registrarse
- Revisar mapas y exhibiciones
- Hacer preguntas del proyecto
- Informar al equipo de TxDOT de sus preocupaciones sobre el proyecto
- Someter sus comentarios

Descripción del Proyecto:

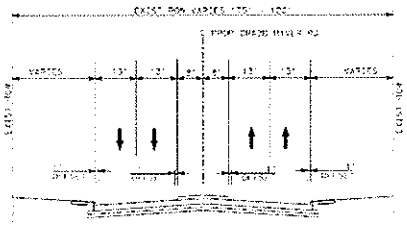
El Condado de Fort Bend y el Departamento de Transportación de Texas (TxDOT) proponen la ampliación de Crabb River Road (FM 2759/762) que consiste de una avenida de 4 carriles que consistirá de cordón y cuneta con una división central. Los límites del proyecto son de la carretera 59 aproximadamente 500 pies al sur de la nueva Lamar Consolidated Independent School District (LCISD), una distancia total de aproximadamente 3.8 millas. Varias opciones de diseño se presentarán en esta reunión para la revisión y comentarios del público

Situación del proyecto / Fecha estimada de finalización:

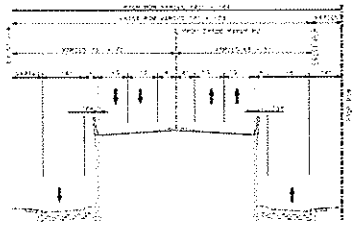
- La evaluación medioambiental y de ingeniería preliminar se anticipa que se terminada en septiembre de 2010
- El diseño final se procederá posteriormente
- La construcción se anticipa comenzar a principios de 2011 y finalizará en junio 2012 dependiendo de la disponibilidad de financiación.



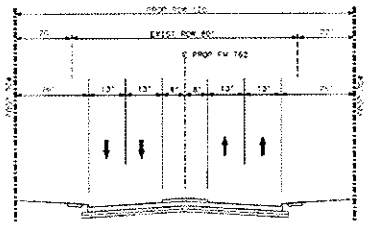
Crabb River Road (FM 2759/762)
Sección típica propuesta – por la calle Sansbury



Crabb River Road (FM 2759/762)
Sección típica propuesta – sur de la calle Sansbury



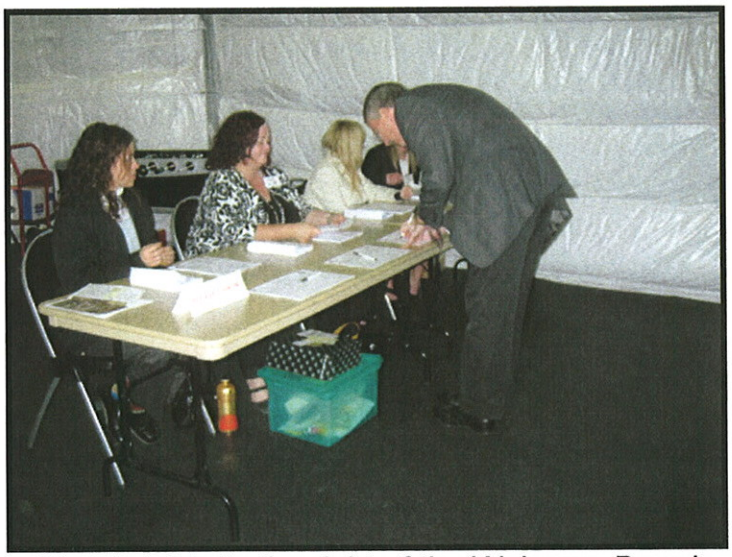
Crabb River Road (FM 2759/762)
Sección típica propuesta – elevado con el crucero del ferrocarril



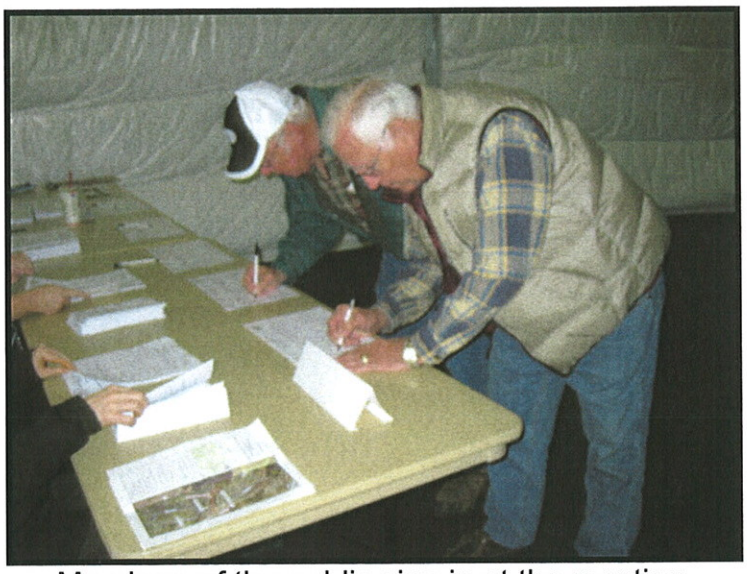
Crabb River Road (FM 2759/762)
Sección típica propuesta – sur del crucero del ferrocarril

Appendix F
Meeting Photographs

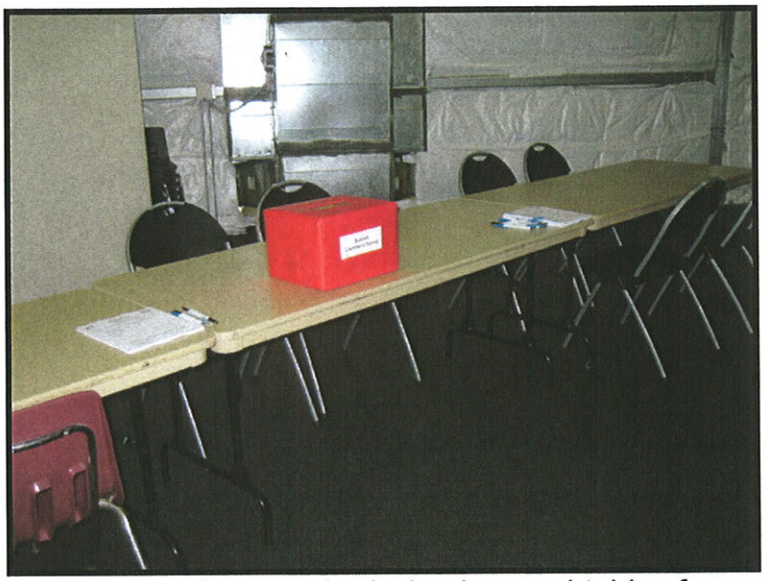
Welcome Board at entrance to Big Tent



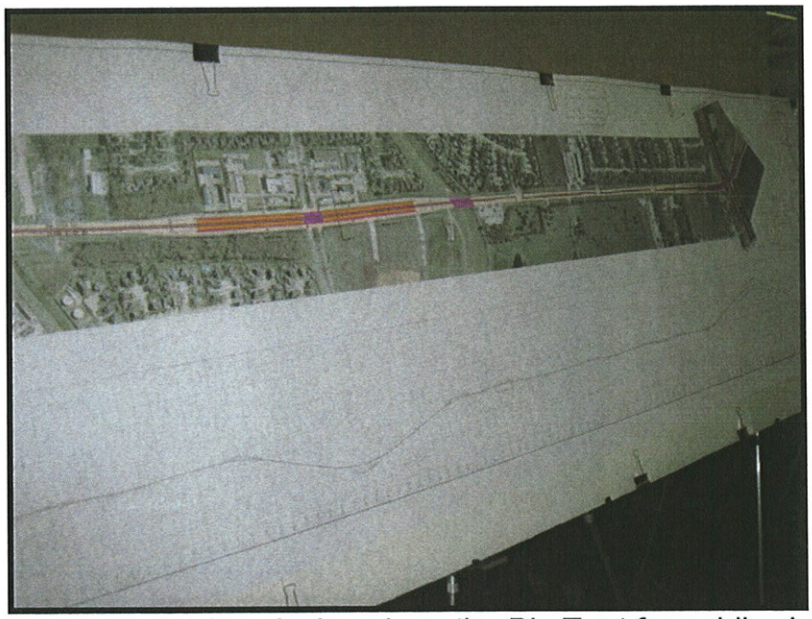
Sign-in table to the right of the Welcome Board



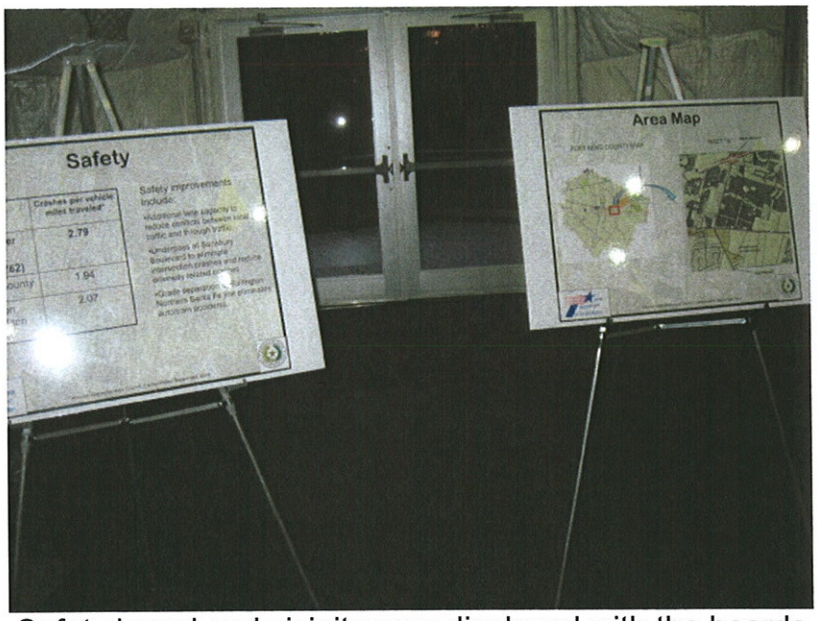
Members of the public sign in at the meeting.



Comment forms submission box and tables for members of the public to write out comments.

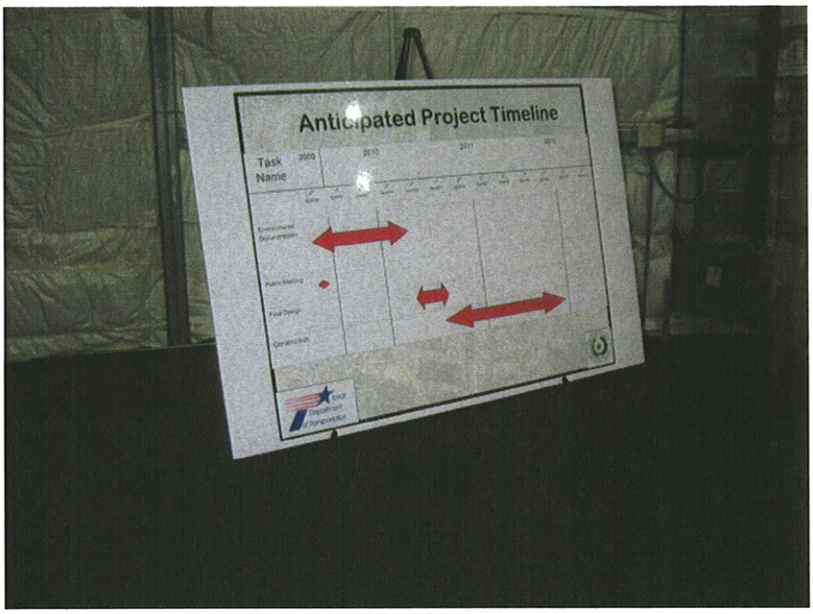


Schematics posted lengthwise along the Big Tent for public viewing.



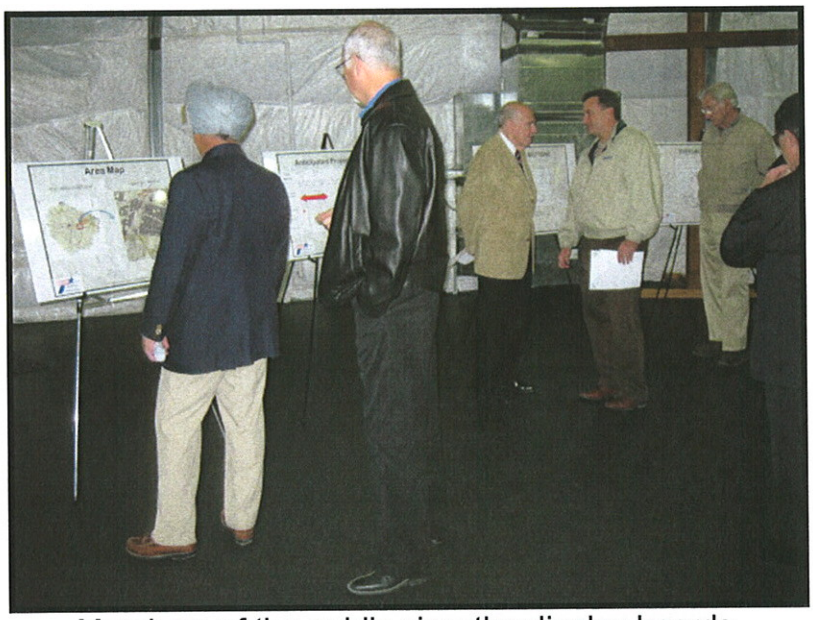
Safety board and vicinity map displayed with the boards at the short end of the Big Tent.

Environmental Constraints Map.



Anticipated project timeline.

Members of the public discuss the proposed project with team members in the Big Tent.



Members of the public view the display boards.