The Texas Natural Resource Conservation Commission (TNRCC or commission) adopts new §114.432 (Control Requirements), §114.436 (Recordkeeping Requirements), §114.437 (Exemptions), and §114.439 (Affected Counties and Compliance Dates). The commission adopts these revisions to add the new Division 4 (Construction Equipment Operating Restrictions), Subchapter I (Non-road Engines), Chapter 114 (Control of Air Pollution from Motor Vehicles), and to revise the State Implementation Plan (SIP). The new sections are adopted with changes to the proposed text as published in the December 31, 1999 issue of the *Texas Register* (24 TexReg 11955).

BACKGROUND AND SUMMARY OF THE FACTUAL BASIS FOR THE ADOPTED RULES

The Dallas/Fort Worth (DFW) ozone nonattainment area (Collin, Dallas, Denton, and Tarrant Counties) was originally designated "moderate" under the Federal Clean Air Act (FCAA) Amendments of 1990 (42 United States Code (USC)) and thus was required to attain the one-hour national ambient air quality standard (NAAQS) for ozone by November 15, 1996. As required by the FCAA, the state submitted an attainment demonstration plan in 1994 which projected attainment of the ozone NAAQS by 1996. This plan was based on a volatile organic compound (VOC) reduction strategy. DFW did not attain the ozone NAAQS in 1996. The United States Environmental Protection Agency (EPA) is authorized to redesignate an area to the next higher classification ("bump up") if the area fails to attain by the required date. In March 1998, in accordance with 42 USC, §7511(b)(2), the EPA reclassified the DFW area from moderate to serious, based on monitored exceedances of the ozone NAAQS between 1994 and 1996. The reclassification required the state to submit a revised SIP that demonstrates that the ozone NAAQS will be met in DFW by November 15, 1999. Because the DFW area continued to exceed the ozone NAAQS in 1999, the EPA may bump up the area to the severe classification. Regardless, the EPA and 42 USC,

§7410 and §7502(a)(2), require the state to submit a revised SIP which demonstrates that the area will attain the ozone NAAQS as expeditiously as practicable. The rules adopted for DFW in this notice are one element of the ozone attainment demonstration SIP for DFW being adopted concurrently in this issue of the *Texas Register*. The commission plans to submit this SIP to the EPA in April 2000.

In 1996, the commission began to develop new modeling for the DFW area and now is using newer air quality models with improved meteorological and emission inputs. The newer modeling since 1996 shows that reductions of oxides of nitrogen (NO_x) in the DFW area and regionally will be necessary to attain the ozone NAAQS. The current modeling also shows that achieving the ozone NAAQS in the DFW area will require strenuous effort, because the area's rapid growth has resulted in increasing amounts of emissions due to increased levels of activity in the area. The emissions from increased activity are offsetting the emission reductions being achieved from new emission standards applicable to the on-road and non-road engine source categories which dominate the emissions inventory in the DFW area.

The emission reduction requirements adopted as part of this SIP package are the outcome of a development process which involved the EPA, the commission, local elected officials, citizens, industrial stakeholders, air quality researchers, and hired consultants. Local officials from the DFW area have formally submitted a resolution to the commission requesting the inclusion of many specific emission reduction strategies, including the one contained in these rules.

The NO_x reductions required for the area to attain the ozone NAAQS have been estimated by extensive use of sophisticated air quality grid modeling which, because of its scientific and statutory grounding, is the

chief policy tool for designing emission reductions. Title 42 USC, §7511a(c)(2), requires the use of photochemical grid modeling for ozone nonattainment areas designated serious, severe, or extreme. The modeling has been conducted with input from a technical advisory committee. Hundreds of emission control strategies were considered in developing the modeling. Varying degrees of reductions from point sources and mobile sources were analyzed in at least 50 modeling iterations, to test the effectiveness of different NO_x reductions. The attainment demonstration modeling submitted for public hearing and comment concurrently with these rules shows that, in order for DFW to achieve the ozone NAAQS by 2007, almost all of the practicably achievable NO_x reductions are necessary from each emission source category, including reductions from counties surrounding the DFW nonattainment area. Therefore, each strategy, including the reductions required by this rulemaking, is crucial to meet federal requirements for the DFW nonattainment area.

The commission's air quality modeling studies conducted for the DFW area show that attaining the one-hour ozone NAAQS will be difficult, and that NO_x reductions from all modeled source categories that impact DFW's air quality will be required. Therefore, reductions of NO_x from construction equipment are a necessary component for the DFW area to attain the one-hour ozone NAAQS. Consequently, these rules are a necessary component of the DFW NO_x reduction strategy. The commission adopts these revisions to Chapter 114 and to the SIP in order to control ground-level ozone in the DFW ozone nonattainment area. The revisions are one element of the control strategy for the proposed DFW Attainment Demonstration SIP. The purpose of these rules is to establish a restriction on the use of construction equipment (non-road, heavy-duty diesel equipment rated at 50 horsepower (hp) and greater) as an air pollution control strategy to delay the emissions of NO_x, a key ozone precursor, until later in the day, thus limiting ozone formation.

This control strategy is necessary for the counties included in the DFW nonattainment area to demonstrate attainment with the NAAQS for ozone.

The revisions implement an operating limitation requiring that construction equipment be restricted from use between the hours of 6:00 a.m. through 10:00 a.m., June 1 through October 31. The affected area includes the four-county DFW nonattainment area of Collin, Dallas, Denton, and Tarrant Counties. The effective date of the rules is June 1, 2005.

In its effort to ensure that the SIP strategies impose no more burden than necessary to protect health and welfare, the commission has decided to remove the counties of Ellis, Henderson, Hood, Hunt, Johnson, Kaufman, Parker, and Rockwall from coverage under these rules due to their limited impact on the air quality within the DFW nonattainment area. Due to public comment, the costs, and cost- effectiveness of these rules, the commission reevaluated the need for implementing the rules in the eight counties surrounding the DFW nonattainment area. The reevaluation included new photochemical modeling runs which applied these rules in the four nonattainment counties only. The results of these runs indicated a minor impact of including the eight surrounding counties in these rules, but also showed that the area could demonstrate attainment of the NAAQS without those reductions in emissions. However, other control measures which were proposed for these counties do have measurable benefits for attainment of the NAAQS, and the costs associated with these other measures are considerably lower.

The North Texas Clean Air Steering Committee (steering committee), representing the DFW ozone nonattainment area counties, requested an air pollution control strategy involving the time restriction of

construction equipment as part of the DFW Attainment Demonstration to reduce ground level ozone necessary for the counties included in the DFW ozone nonattainment area to be able to demonstrate attainment with the ozone NAAQS. At the request of the steering committee, the commission developed the construction equipment operating restrictions, which ban construction equipment operation during certain hours of the summer ozone season.

Using the Base 4d modeling emissions inventory, commission staff estimated that area and non-road emissions make up 33% of all NO_x emissions in the DFW area. Staff calculated that 48% of the emissions from area and non-road emissions inventory come from construction equipment, which amounts to 16% of the region's total NO_x emissions. In the Base 4d inventory, the amount of emissions from construction equipment in the DFW 12-county consolidated metropolitan statistical area (CMSA) was approximately 82 tons per day. Since the time the steering committee made its recommendation, two significant changes have taken place which affect the analysis: first, the construction equipment emissions were significantly revised in the Base 6a inventory. Second, the commission has reduced the spatial extent of the rule governing hours of operation to now include only the four nonattainment counties, instead of the entire 12-county CMSA. The 1996 construction equipment NO_x emission total for the four nonattainment counties in the Base 6a modeling inventory is now 50.6 tons/day.

The non-road mobile source category is one of the few sources of ozone-forming emissions that is not currently regulated by state or federal rules. Federal controls such as cleaner-burning engines and cleaner-diesel fuel have been proposed, but are not scheduled to be implemented until the 2004 time frame.

Ozone is formed through chemical reactions between natural and man-made emissions of VOC and NO_x in the presence of sunlight. Higher ozone levels occur most frequently on hot summer afternoons. The critical time for the mixing of NO_x and VOC is early in the day. By delaying the hours of operation for construction equipment and delaying the release of NO_x emissions until after 10:00 a.m. during the ozone season, the NO_x emissions will not mix in the atmosphere with other ozone-forming compounds until after the critical mixing time has passed. Therefore, production of ozone will be stalled until later in the day when optimum ozone formation conditions no longer exist, ultimately reducing the peak level of ozone produced.

This strategy is not dependent on atmospheric conditions to reduce ozone formation, as such strategies are disfavored by FCAA, §7423. Instead, the strategy creates reductions in the amount of NO_x added to the atmosphere by construction equipment during the time of day when those emissions have been shown to contribute to exceedances of the ozone NAAQS. Use of "time of day" restrictions such as this for NAAQS compliance strategies was anticipated and discussed by the EPA in their off-road mobile source rules.

Because this strategy does not create an actual reduction in emissions nor require the use of additional control equipment or any new technology, the commission estimated that the fiscal implications may be significant due to the shift in work hours. The restriction in the hours of operation may require that companies adjust their work schedules to coincide with the hours of operation allowed under the regulation.

SECTION BY SECTION DISCUSSION

Subchapter I is a new subchapter being adopted in concurrent rulemaking. The new Division 4 is adopted regarding construction equipment operating restrictions.

The new §114.432 establishes control requirements for construction equipment operating restrictions. This section restricts the operation of any construction equipment between the hours of 6:00 a.m. to 10:00 a.m. from June 1 through October 31. The equipment to which these rules apply includes all non-road, heavy-duty diesel equipment classified as "construction equipment," rated at 50 hp and greater, *regardless of how it is being used*. For example, equipment such as bulldozers used in sanitary landfills, non-road cranes used in demolition, and rubber tire loaders used in manufacturing operations are covered by these rules. It is not the commission's intent to restrict the use of agriculture equipment, which does not meet the definition of construction equipment.

The commission received comments noting that a literal interpretation of the term "construction equipment" could lead the reader to believe that the rules only applied to non-road, heavy-duty diesel equipment used only for purposes of construction and mining, when in fact, the rules apply to all construction equipment greater than 50 hp, regardless of how it is being used. In response to these comments indicating that the rules were misleading in that they did not clearly state what types of equipment and/or operations the rules applied to, the commission clarifies its intent in the following list of equipment specifically covered by these rules.

Construction equipment is considered to be, but is not limited to, pavers, paving equipment, plate compactors, rollers, scrapers, surfacing equipment, signal boards/light plants, trenchers, bore/drill rigs,

excavators, concrete/industrial saws, cement and mortar mixers, cranes, graders, off-highway trucks, crushing/processing equipment, rough terrain forklifts, rubber tire loaders, rubber tire tractors/dozers, tractors/loaders/backhoes, crawler tractors/dozers, skid steer loaders, off-highway tractors, and dumpsters/tenders.

The Accelerated Purchase of Tier 2/Tier 3 Non-road Compression-ignition Equipment rules (Rule Log Number 1999-055H-114-AI) includes several categories of equipment not covered by these rules, such as commercial and institutional equipment greater than 50 hp, including compressors, welders, and generators; industrial equipment greater than 50 hp that is not classified as "construction equipment" including aerial lifts, forklifts, and sweepers/scrubbers; commercial equipment; and lawn and garden equipment greater than 50 hp.

The new §114.436 requires all companies or independent equipment operators subject to the provisions of §114.432 to maintain daily records of equipment operation in the affected counties.

The new §114.437 establishes exemptions from the control requirements of §114.432 and the recordkeeping requirements of §114.346. These exemptions include construction equipment used exclusively for emergency operations to protect public health and the environment, and for mixing, transporting, pouring, or processing wet concrete. Also, the commission added an exemption under §114.437(b) that allows operators that submit an emissions reduction plan (plan) by May 31, 2002, which is approved by the executive director and EPA by May 31, 2003, to operate during the restricted hours. The commission anticipates that by offering this exemption, equipment manufacturers or regulated

businesses will invest in research and development of emissions-reducing technology for construction equipment to enable affected businesses to meet the exemption. The commission specifically requested comment on allowing the use of added controls such as catalytic converters or other after-market devices, or the use of EPA-certified cleaner equipment, to exempt such equipment from the operating restrictions for the years 2001-2004. Ten businesses commented specifically on this issue. The comments are addressed in the ANALYSIS OF TESTIMONY section of this preamble.

The plan submitted under §114.437(b) must describe in detail how the operator will modify his behavior or fleet of equipment to reduce NO_x emissions by June 1, 2005 by a target amount equivalent to the total NO_x reductions achieved by implementation of these rules and the Accelerated Purchase of Non-road Heavy-duty Diesel Equipment rules. In order to be approved, the plan must demonstrate reductions of NO_x equivalent to those required by both §114.412 (Accelerated Purchase rule) and §114.432, and must contain adequate enforcement provisions. The commission will apply emissions inventory factors for construction equipment used in the modeling utilized in the development of these rules to quantify the NO_x and VOC emissions reductions and equivalent ozone reductions resulting from the fleet modifications. The commission will develop a guidance document to assist operators in developing their plans. The guidance document will contain both the target emissions amount operators must meet, as well as emission factors for each type of equipment affected by the rules, and will offer guidance on how to calculate total emissions reductions for a fleet of equipment. Examples of modifications include replacing existing equipment with cleaner-burning engines, retrofitting existing equipment with emissions-reducing technology, using emissions-reducing fuel, and participating in an emissions banking and trading program.

The commission requested comments on what, if any, emission banking and trading program should be developed to offer alternative means of compliance for facilities required to make NO_x reductions for SIP purposes. The commission is exploring the possibility of either the creation of a mass cap and trade system or revising the existing emission banking and trading system in 30 TAC Chapter 101, General Air Quality Rules, §101.29, concerning Emissions Banking and Trading. The commission intends to propose a comprehensive trading system during summer 2000. The commission believes it is appropriate to develop a holistic approach to emission trading, as opposed to a piecemeal approach. The commission is open to accepting all ideas regarding an emission trading program. Comments on emission trading will not be addressed as part of this rulemaking, but will be addressed when the commission considers its banking and trading program during summer 2000.

A mass cap and trade system would require that the commission allocate allowances to participating sources. Each allowance would be an authorization to emit a specific amount of NO_x, for example 100 tons. Each participating source would be required to have allowances equal to or greater than its emissions during a specific control period. The control period could be identified as an ozone season, a 12-month period, or some other appropriate period. Allowances could be traded from one source to another so a source that reduced emissions below its allotted allowances could sell excess allowances to another source or a broker. Additionally, a source that finds required reductions to be cost-prohibitive can purchase equivalent credits to meet its burden of compliance. This option would require monitoring and reporting on a regular basis to assure that compliance with the allowances is demonstrated. This system would put a cap on all emissions from participating sources. Participation in this type of system is usually mandatory to ensure that participating sources must comply with equivalent emission requirements. An allowance

trading system could be similar to the Emissions Banking and Trading of Allowances System adopted on December 16, 1999 under Subchapter H of Chapter 101, implementing the allowance trading requirements of Senate Bill 7 (see the January 7, 2000 issue of the *Texas Register* (25 TexReg 128)).

The existing emission reduction credit (ERC) and discrete ERC (DERC) trading systems are based on the concepts of open market systems. Participation is not mandatory; sources have the option of either complying with the emission standard or using emission credits to offset the emission standard. Those sources choosing to participate in the open market system would quantify their reductions from a set baseline. These reductions could then be purchased and used by other sources to satisfy their NO_x reduction obligation.

Before proposing any emissions banking and trading program, the commission will hold a stakeholder meeting to discuss the comments received and solicit input before proposal, estimated to occur sometime during summer 2000.

The commission is requiring submission of the emission reduction plans by May 31, 2002 to allow sufficient time to review and quantify the collective emissions reductions the plans propose. The executive director and EPA will complete the reviews by May 31, 2003, which coincides with the planned mid-course review of all control measures included in the SIP. After reviewing the plans, the executive director will determine whether the collective emissions reductions proposed by the plans are equivalent to the NO_x reductions achieved from implementing both this rule and the Accelerated Purchase rule. The commission will implement the Construction Equipment Operating Restrictions rules on June 1, 2005 and the

Accelerated Purchase rules on December 31, 2004, as proposed, for operators who did not submit plans or whose plans were not approved.

The new §114.439 specifies the counties which are subject to the new requirements and the dates and times these counties are subject to these requirements. The affected counties include the four counties in the DFW nonattainment area (Collin, Dallas, Denton, and Tarrant). The commission changed the effective date of the rules from June 1, 2001 to June 1, 2005. The commission determined that delaying the effective date would allow manufacturers more time to produce and release new cleaner-burning equipment and retrofit technology, which would enable equipment operators to plan for and implement purchases of this equipment before the rules become effective. An increase in the availability and use of cleaner-burning construction equipment, fuel, and retrofit technology prior to 2005 could result in a decrease in emissions sufficient to warrant the repeal of these rules prior to implementation. However, the rules and the resulting reductions in ozone levels must be adopted at this time because of the lack of alternative measures that would produce equivalent reductions in peak ozone levels. The contribution towards the reduction in ozone levels from restricting the hours of operation of construction equipment is an essential component in the DFW area's attainment with federal air quality standards for ozone.

FINAL REGULATORY IMPACT ANALYSIS

The commission reviewed the rulemaking in light of the regulatory analysis requirements of Texas Government Code, §2001.0225, and determined that the rulemaking meets the definition of a "major environmental rule" as defined in that statute. "Major environmental rule" means a rule the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure and

that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. The amendments to Chapter 114 are intended to protect the environment or reduce risks to human health from environmental exposure to ozone and, although we have no estimates of cost at this time, delays could affect a sector of the economy in a material way. The amendments are intended to implement an operating-use restriction program requiring that construction equipment be restricted from use between the hours of 6:00 a.m. through 10:00 a.m., June 1 through October 31. This program is part of the strategy to reduce the formation of ozone by delaying NO_x emissions from construction equipment until later in the day when optimum conditions for the formation of ozone no longer exist. The program was developed for the DFW ozone nonattainment area to be able to demonstrate attainment with the ozone NAAQS. The steering committee representing the DFW ozone nonattainment area counties requested an air pollution control strategy, including the operating restrictions on construction equipment, be established to reduce the formation of ozone and demonstrate attainment with the NAAQS. The amendments are part of the commission response to the request and one element of the DFW Attainment Demonstration SIP. Although the amendments meet the definition of a "major environmental rule" as defined in Texas Government Code, and will be considered a major environmental rule, §2001.0225 only applies to a major environmental rule, the result of which is to: 1) exceed a standard set by federal law, unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law. This rulemaking does not meet any of these four applicability requirements of a "major environmental rule." Specifically, the time

restrictions on construction equipment within this rulemaking action were developed in order to meet the NAAQS for ozone set by the EPA under 42 USC, §7409, and therefore meet a federal requirement. States are primarily responsible for ensuring attainment and maintenance of NAAQS once EPA has established those standards. Under 42 USC, §7410 and related provisions, states must submit, for approval by EPA, SIPs that provide for the attainment and maintenance of NAAQS through control programs directed to sources of the pollutants involved. In addition, the commission is expressly required by state law, Texas Clean Air Act (TCAA), §382.039, to develop and implement measures necessary to demonstrate and maintain attainment of NAAQS and by TCAA, §382.012, to prepare and develop a comprehensive plan for the proper control of the state air. Moreover, the rulemaking action was developed specifically in order to meet the air quality standards established under federal law as NAAQS. This rulemaking action is intended to help bring ozone nonattainment areas into compliance, and help keep attainment and near-nonattainment areas from going into nonattainment. The amendments do not exceed a standard set by federal law, exceed an express requirement of state law, nor exceed a requirement of a delegation agreement. The amendments were not developed solely under the general powers of the agency, but were specifically developed to meet the air quality standards established under federal law as NAAQS and under TCAA, §§382.012, 382.017, 382.019, and 382.039. Nine businesses submitted comment on the draft regulatory impact analysis during the public comment period.

Section 7410 of the FCAA requires states to adopt a SIP which provides for "implementation, maintenance, and enforcement" of the primary NAAQS in each air quality control region of the state. While §7410 does not require specific programs, methods or reductions in order to meet the standard, state SIP's must include "enforceable emission limitations and other control measures, means or techniques

(including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance as may be necessary or appropriate to meet the applicable requirements of this chapter," (meaning Chapter 85, Air Pollution Prevention and Control). It's true that the FCAA does require some specific measures for SIP purposes, like the inspection and maintenance program, but those programs are the exception, not the rule, in the SIP structure of the FCAA. The provisions of the FCAA recognize that states are in the best position to determine what programs and controls are necessary or appropriate in order to meet the NAAQS. This flexibility allows states, affected industry, and the public, to collaborate on the best methods for attaining the national ambient air quality standards for the specific regions in the state. Even though the FCAA allows states to develop their own programs, this flexibility does not relieve a state from developing a program that meets the requirements of §7410. Thus, while specific measures are not generally required, the emission reductions are required. States are not free to ignore the requirements of §7410 and must develop programs to assure that the nonattainment areas of the state will be brought into attainment on schedule. Therefore, adopting the SIP rules are specifically required by federal law.

Additionally, the legislative history contradicts the conclusion of the commenters that a full Regulatory Impact Analysis (RIA) is required of these rules. The requirement to provide a fiscal analysis of proposed regulations in the Texas Government Code were amended by Senate Bill 633 (SB 633) during the 75th Legislative Session. The intent of SB 633 was to require agencies to conduct a RIA of extraordinary rules. These are identified in the statutory language as major environmental rules that will have a material adverse impact and will exceed a requirement of state or federal law, a delegated federal program or is adopted solely under the general powers of the agency. With the understanding that this requirement would seldom

apply, the commission provided a cost estimate for SB 633 that concluded "based on an assessment of rules adopted by the agency in the past, it is not anticipated that the bill will have significant fiscal implications for the agency due to its limited application." The commission also noted that the number of rules that would require assessment under the provisions of the bill was not large. This conclusion was based, in part, on the criteria set forth in the bill that exempted proposed rules from the full analysis unless the rule was a major environmental rule that exceeds a federal law. As discussed above, the FCAA does not require specific programs, methods or reductions in order to meet the NAAQS, thus, states must develop programs for each nonattainment area to ensure that area will meet the attainment deadlines. Because of the ongoing need to address nonattainment issues, the commission routinely adopts rules for inclusion into the SIP. The legislature is presumed to understand this federal scheme. If each rule proposed for inclusion in the SIP was considered to be a major environmental rule that exceeds federal law, then every SIP rule would require the full RIA contemplated by SB 633. This conclusion is inconsistent with the conclusions reached by the commission in its cost estimate and by the Legislative Budget Board (LBB) in its fiscal notes. Since the legislature is presumed to understand the fiscal impacts of the bills it passes, and that presumption is based on information provided by state agencies and the LBB, the commission believes that the intent of SB 633 was to only require the full RIA for rules that are extraordinary in nature. While the SIP rules will have a broad impact, that impact is no greater than is necessary or appropriate to meet the requirements of the FCAA. For these reasons, SIP rules fall under the exception in Texas Government Code, §2001.0225(a), because they are specifically required by federal law.

TAKINGS IMPACT ASSESSMENT

The commission prepared a takings impact assessment for these rules in accordance with Texas Government Code, §2007.043. The following is a summary of that assessment. The specific purpose of the rulemaking is to establish a construction equipment operating restriction to delay NO_x emissions that lead to high levels of ground-level ozone production. This rulemaking will act as an air pollution control strategy to reduce NO_x emissions necessary for the four counties included in the DFW ozone nonattainment area to be able to demonstrate attainment with the ozone NAAQS. The affected area consists of the four counties included in the DFW ozone nonattainment area. Promulgation and enforcement of the rules will not burden private, real property as it only regulates mobile sources, and will not cause a takings to occur. Although the rules do not directly prevent a nuisance, prevent an immediate threat to life or property, or prevent a real and substantial threat to public health and safety, the rules partially fulfill a federal mandate under the 42 USC, §7410. Specifically, the emissions limitations and delays within these rules were developed in order to meet the ozone NAAQS set by the EPA under the 42 USC, §7409. States are primarily responsible for ensuring attainment and maintenance of the NAAQS, once the EPA has established them. Under 42 USC, §7410 and related provisions, states must submit, for EPA approval, SIPs that provide for the attainment and maintenance of NAAQS through control programs directed to sources of the pollutants involved. Therefore, the purpose of the rules is to implement a construction equipment operating restriction necessary for the DFW nonattainment area to meet the air quality standards established under federal law as NAAQS. Consequently, the exemption which also applies to these rules is that of an action reasonably taken to fulfill an obligation mandated by federal law. For the reasons stated, these revisions will not constitute a takings under Texas Government Code, Chapter 2007.

COASTAL MANAGEMENT PROGRAM CONSISTENCY REVIEW

The commission determined that this rulemaking relates to an action or actions subject to the Texas Coastal Management Program (CMP) in accordance with the Coastal Coordination Act of 1991, as amended (Texas Natural Resources Code, §§33.201 et. seq.), and the commission rules in 30 TAC Chapter 281, Subchapter B, concerning Consistency with the Texas Coastal Management Program. As required by 31 TAC §505.11(b)(2) and 30 TAC §281.45(a)(3), relating to actions and rules subject to the CMP, commission rules governing air pollutant emissions must be consistent with the applicable goals and policies of the CMP. The commission reviewed this action for consistency with the CMP goals and policies in accordance with the rules of the Coastal Coordination Council, and determined that the action is consistent with the applicable CMP goals and policies. The CMP policy applicable to this rulemaking action is the policy that commission rules comply with regulations in 40 Code of Federal Regulations (CFR), to protect and enhance air quality in the coastal area (31 TAC §501.14(q)). No new sources of air contaminants will be authorized by the rule amendments. Therefore, in compliance with 31 TAC §505.22(e), the commission affirms that this rulemaking is consistent with CMP goals and policies.

No comments were submitted on the consistency of the proposed rules with the CMP during the public comment period.

HEARINGS AND COMMENTERS

The commission held public hearings on this proposal on January 24, 2000 in El Paso; January 25, 2000 in Austin; January 26, 2000 in Longview and Irving; January 27, 2000 in Dallas and Lewisville; January 28, 2000 in Fort Worth; January 31, 2000 in Beaumont and Houston; and February 9, 2000 in Denton. The

comment period was originally scheduled to close on February 1, 2000, but was extended until February 14, 2000 (see the January 21, 2000 issue of the *Texas Register* (25 TexReg 461)).

A total of 627 organizations and individuals submitted comments. One organization, Neighbors for Neighbors (NFN), and 16 individuals supported the proposal. The remainder of the commenters opposed the proposal or suggested changes. The name of the commenters opposing or suggesting changes and their comments are specifically noted under the ANALYSIS OF TESTIMONY of this preamble.

ANALYSIS OF TESTIMONY

It is unfair to single out the construction industry, which is relatively small and less politically powerful. This comment was made by the Fort Worth Chapter of the Associated General Contractors of America (AGC), Associated Builders and Contractors, Inc., Fulton Supply and Recycling, Inc., Lewis Crane & Hoist, Inc., Holes, Inc., Mag Creek, L.P., The Williams and Beasley Company, R.E. Cupp Construction, J.L. Steel, Inc., and American Subcontractors Association-North Texas Chapter, Cullum Construction Co., and two individuals.

The commission concurs and has not singled out the construction industry. In response to comments indicating that the rule was unclear in that it did not clearly state what types of equipment and/or operations the rule applied to, the commission has provided in the rule adoption preamble a list of equipment covered by this rule, and clarified that the rule applies to all operators of non-road heavy-duty diesel construction equipment rated at 50 hp and above, with the exception of agricultural users, regardless of how the equipment is being used. For example, equipment such as bulldozers used in

sanitary landfills, non-road cranes used in demolition, and rubber tire loaders used in manufacturing operations are covered by these rules.

Construction equipment was specifically proposed for regulation because of its significant contribution to NO_x emissions in the DFW area, relative to other diesel equipment. The commission has also proposed other rules to regulate emissions from not only non-road but on-road diesel equipment and vehicles. Reducing emissions from non-road diesel equipment is also addressed with the Accelerated Purchase rules, which require that operators of equipment from 50-100 hp must use 100% Tier 2 equipment by the end of calendar year 2007. Operators of equipment from 100-750 hp must use 50% Tier 3 (lower-emitting) engines and the remainder Tier 2 engines by the end of 2007. Operators of equipment greater than 750 hp must use 100% Tier 2 equipment by the end of 2007. This rule is also applicable to the four-county DFW area. Emissions from on-road and non-road diesel equipment will also be reduced through the clean diesel fuel rule which will be effective in 2002. The commission anticipates that these controls will offer operators of construction equipment greater flexibility in complying with this rule.

The steering committee, representing the DFW ozone nonattainment area counties, requested an air pollution control strategy restricting the hours of operation of construction equipment as part of the DFW Attainment Demonstration to reduce ground level ozone to enable the counties included in the DFW ozone nonattainment area to demonstrate attainment with the ozone NAAQS. At the request of the steering committee, the commission developed the construction equipment operating limitation

which restricts the use of construction equipment from 6:00 a.m. to 10:00 a.m. during the summer ozone season.

This control measure was proposed because of the significant contribution that this type of equipment makes to DFW area NO_x emissions. Using the Base 4d modeling emissions inventory, commission staff estimated that area and non-road emissions make up 33% of all NO_x emissions in the DFW area. Staff calculated that 48% of the emissions from area and non-road emissions inventory come from construction equipment which amounts to 16% of the region's total NO_x emissions. In the Base 4d inventory, the amount of emissions from construction equipment in the DFW 12-county CMSA was approximately 82 tons per day. Since the time the steering committee made its recommendation, two significant changes have taken place which affect the analysis. First, the construction equipment emissions were significantly revised in the Base 6a inventory. Second, the commission has reduced the spatial extent of the rule governing hours of operation to now include only the four nonattainment counties, instead of the entire 12-county CMSA. The 1996 construction equipment NO_x emission total for the four nonattainment counties in the Base 6a modeling inventory is now 50.6 tons/day. The non-road mobile source category is one of the few sources of ozone-forming emissions that is not currently regulated. Emissions from on-road heavy-duty diesel vehicles and equipment are already significantly regulated in that currently, all diesel-powered vehicles and equipment registered to be used on-road must use federally certified on-road diesel fuel. Operators of on-road heavy-duty diesel vehicles and equipment are also assessed a federal diesel fuel tax. In addition, on-road diesel vehicles and equipment are included in the low emission diesel fuel rule for the DFW area. That rule requires the use of diesel fuel with a maximum sulfur content of 500 ppm, a maximum of 10% aromatics, and a

minimum cetane rating of 48. Under those rules, all DFW-area diesel-powered compression ignition engines, both on-road and non-road, will be required to use low emission diesel when refueling within the control area. These examples demonstrate that the commission is not singling out any particular industry in its rulemaking efforts.

The shift will negatively impact businesses' profitability, productivity, and ability to attract and retain qualified workers, and will increase project duration and job costs, which will have to be passed on to the consumer. This comment was made by 160 individuals and the following organizations: AGC of Texas, Representative Tommy Merritt, Texas Citizens for a Sound Economy, AGC Building & Trades Division of El Paso, Jagoe, United Masonry Contractors Association (UMCA), Dallas and Fort Worth Chapters of the AGC, Texas Hot Mix Asphalt Pavement Association (THMAPA), Sustainable Architectural Committee - Fort Worth Chapter of American Institute of Architects (AIA - Fort Worth), Organization of Hispanic Contractors (OHC), Texas Public Policy Foundation (TPPF), APAC-Texas, CX Transportation Group (CXTG), Allied, Green Party, City of North Richland Hills Councilman Oscar Trevino, Martin K. Eby Construction Co., Inc., Crabtree Barricade Systems, Inc., Murray Construction Co., Inc., J-N Construction Co., Inc., Associated Builders and Contractors, Inc., Gibson & Associates, Inc., Stirling Wainscott Builders, Inc., Jim Johnson Homes, U.S. Home, LeMay Homes, Tri City Homes, Barnes Builders, Long Custom Homes, Ray Tonjes Builder, Inc., Steiner Ranch, Sterling Development Company, Holmes Homes, Marsters Company, Don Schmerse Custom Homes, Tommy Bailey Homes, Inc., Basden Steel Corporation, Kaufman & Broad, Brother Strong, A & J Construction, Inc., Coats, Rose, Yale, Ryman, & Lee, Emerald Builders, Belmont Custom Homes, Randy Haugh Construction Company, Texas Association of Builders, Terrell Pruett, Home Builders Association of Greater Dallas, Danis Environmental Industries,

Inc., BGR Specialties, Anchor Roofing Systems, Ltd., Sedalco, Inc., Wilson Construction Systems, Inc., Buster Paving, Fisher Pearson, Inc., Linbeck Construction Corporation, Ram Steel Company, Inc., C.B.C. Masonry, Inc., Reynolds Asphalt and Construction Co., Branch and Sons Contractors, Inc., Reed Plumbing, Inc., Morgan & Associates, Inc., Richard Carr Construction Co., Andres Construction Services, Bob McCaslin Precast Construction Co., Double Eagle Foundation Drilling, Lyness Construction, Inc., Howard F. Kane Plumbing Co., Inc., IESI Corp., Texas Shafts, Inc., Walker Building Corporation, CCI Manufacturing, Inc., Texas Building Branch - AGC, Orval Hall Excavating Co., Sierra Demolition & Excavation, Inc., H & H Steel Fabricators, Inc., Gomez Service Corporation, City of Cleburne, Waste Management, Watauga Texas, City of Grand Prairie, Trinity Waste Services, City of Grand Prairie, City of Arlington, Charter Waste, Inc., City of Weatherford, North Central Texas Council of Governments (NCTCOG), Lewis Crane & Hoist, Inc., Holes, Inc., Mag Creek, L.P., The Williams and Beasley Company, R.E. Cupp Construction, J.L. Steel, Inc., American Subcontractors Association-North Texas Chapter, Whiz-Q-Stone, Williams Brothers Construction Co., Granite Construction Co., McClendon Construction Co., Inc., Boring & Tunneling Co. of America, Inc., Pete Durant & Associates, Inc., Oakcrest Homes, Texas Aggregates & Concrete Association, Cullum Construction Co., Tommy Ford Construction Company, Greater Houston Builders Association, T.J. Lambrecht Construction, McAllen Construction, Inc., North Texas Bridge Co., Inc., Hunter Industries, Inc., Basden Steel Corp., Pipelayers, Inc., Houston Construction Industry Coalition, The International Association of Foundation Drilling, the Texas Industry Project, Texas Department of Transportation (TxDOT), American Road & Transportation Builders Association (ARTBA), Business Coalition for Clean Air, M. Hanna Construction Co., Inc., Gaughan & Stone, Associated Builders & Contractors of Greater Houston, D & T Contracting, Inc., Exxon Mobil Chemical Company, Long Lake, Ltd., Thompson & Knight, Texas Nursery & Landscape

Association, City of Everman, Meridian Aggregates Company, Dallas/Fort Worth International Airport, Senator Tom Haywood, Boley-Featherton Insurance, Environmental & Chemical Technology, Inc., and L.E. Beavers Corp.

American Subcontractors Association-North Texas Chapter and the Dallas Chapter of the AGC commented that a cost increase in the range of 18-20% will be needed to offset the loss in production, and projects would increase in length approximately eight weeks. TxDOT commented that costs would increase 40-60%. Tommy Ford Construction Co. commented that his equipment operators will experience a 16% reduction in take-home pay and productivity due to lost hours, reducing his annual business volume by 25%. The University of Texas System estimated that the shift would result in a cost increase of 6.0% for planned construction of 23 projects in the DFW area, amounting to approximately $24.5 million.

The commission recognizes that compliance with this rule may cause unavoidable losses in productivity, which may result in increased project duration and costs. The commission also recognizes that certain members of the affected workforce may choose to seek other jobs with different hours. However, the commission anticipates that affected companies will find and make the necessary adjustments to minimize these impacts, especially considering the far more substantial impacts that would result from the failure of the DFW area to attain federal air quality standards that this rule is designed to help achieve. The restriction on hours of operation is an essential component to the overall strategy to reduce peak ozone levels to enable the DFW area to attain federal ozone standards. Although many of the rules included in the current SIP attainment strategy will not be easy to implement and will cause many of the affected entities to adjust normal operations and make

certain sacrifices, these rules are of critical importance in the protection of the environment and human health, which is essential for continued economic prosperity.

The shift would have a negative economic and social impact on minorities who are a significant percentage of workers in the construction and landscaping industry. This comment was made by AGC of Texas, Martin K. Eby Construction Co., Inc., Crabtree Barricade Systems, Inc., and Texas Citizens for a Sound Economy, McClendon Construction Co, Inc., and ARTBA.

The Houston Construction Industry Coalition cites the United States Census Bureau, which reports that for 1997, black and Hispanic workers comprised 22% of the construction workforce.

The commission maintains that the rule as adopted will not have a disparate impact on persons based on race, color, or national origin. The basis for the rule is protection of human health and the environment, and shifting emissions from construction equipment from 6:00 to 10:00 a.m. has been demonstrated to provide benefits in reducing ozone formation. Although it is not clear what, if any, legal standard the commenters allege the commission would violate in adopting the rule, some state that the rule would "disproportionately impact" minorities. This is clearly a reference to Title VI of the Civil Rights Act of 1964. In order for the commission to be shown in violation of Title VI, a disproportionately negative impact to minorities must be demonstrated. The rule will not have negative environmental impacts, thus it is impossible for negative impacts to be disproportionately borne by minorities. As for other potential negative impacts of the rule, these are clearly borne

equally by all operators of equipment governed by the rule without any differentiation by race, color, or national origin.

The impact on small and minority businesses will be great. These businesses will lose work to larger companies that have more resources. This comment was made by the THMAPA, the Dallas and Fort Worth Chapters of the AGC, OHC, Allied, American Subcontractors Association-North Texas Chapter, APAC-Texas, AGC of Texas, Houston Construction Industry Coalition, ARTBA, Tommy Ford Construction Company, L.E. Beavers Corp., Williams Brothers Construction Co., and International Association of Foundation Drilling.

ARTBA commented that over 58% of highway contractors have fewer than 50 employees, creating a significant impact to small businesses.

The commission disagrees with these comments. This rule is facially neutral and applies equally to all operators of the types of equipment affected by the rule. The commission maintains that the rule as adopted will not have a disparate impact on persons based on race, color, or national origin. The basis for the rule is protection of human health and the environment, and shifting emissions from construction equipment from 6:00 to 10:00 a.m. has been demonstrated to provide benefits in reducing ozone formation. This rule equally applies to all operators of construction equipment without any differentiation by business size or ownership.

The shift will negatively impact the quality of life and safety/health of both workers and the public. Working in the hottest part of the day will increase the risk of heat-induced illnesses and fatigue, heightening the risk of accidents. Visibility and depth perception are reduced in the darker evening and nighttime hours. The potential for alcohol-related accidents substantially increases after 5:00 p.m. Family life for all construction employees, including engineers, laborers, administrative support staff, and other job site employees, will be disrupted as employees will be forced to work extended hours. Employees will have less time to spend in civic, church, and other non-work related activities, and childrens' school and recreational functions. Many parents will face difficulties arranging child care.

These comments were made by AGC of Texas, AGC Building & Trades Division of El Paso, J.D. Abrams, Inc., THMAPA, City of North Richland Hills Councilman Oscar Trevino, Dallas and Fort Worth Chapters of the AGC, OHC, APAC-Texas, the American Society of Safety Engineers, CXTG, Boring and Tunneling Company of America, Silver Creek Materials, Allied, Green Party, Martin K. Eby Construction Co., Inc., Crabtree Barricade Systems, Inc., Murray Construction Co., Inc., J-N Construction Co., Inc., Associated Builders and Contractors, Inc., Gibson & Associates, Inc., Stirling Wainscott Builders, Inc., Jim Johnson Homes, U.S. Home, LeMay Homes, Tri City Homes, Barnes Builders, Long Custom Homes, Ray Tonjes Builder, Inc., Steiner Ranch, Sterling Development Company, Holmes Homes, Marsters Company, Don Schmerse Custom Homes, Tommy Bailey Homes, Inc., Basden Steel Corporation, Kaufman & Broad, Brother Strong, A & J Construction, Inc., Coats, Rose, Yale, Ryman, & Lee, Emerald Builders, Belmont Custom Homes, Randy Haugh Construction Company, Texas Association of Builders, Terrell Pruett, Home Builders Association of Greater Dallas, Danis Environmental Industries, Inc., BGR Specialties, Anchor Roofing Systems, Ltd., Sedalco, Inc., Wilson Construction Systems, Inc., Buster

Paving, Fisher Pearson, Inc., Linbeck Construction Corporation, Ram Steel Company, Inc., C.B.C. Masonry, Inc., Reynolds Asphalt and Construction Co., Branch and Sons Contractors, Inc., Reed Plumbing, Inc., Morgan & Associates, Inc., Richard Carr Construction Company, Andres Construction Services, Bob McCaslin Precast Construction Co., Double Eagle Foundation Drilling, Lyness Construction, Inc., Howard F. Kane Plumbing Co., Inc., IESI Corp., Texas Shafts, Inc., Walker Building Corporation, CCI Manufacturing, Inc., Texas Building Branch - AGC, Orval Hall Excavating Co., Sierra Demolition & Excavation, Inc., H & H Steel Fabricators, Inc., Gomez Service Corp., City of Cleburne, Texas Solid Waste Association of North America (TxSWANA), Silver Creek Materials Recycling and Compost, Waste Management, Watauga Texas, Trinity Waste Services, City of Grand Prairie, City of Arlington, Charter Waste, Inc., City of Weatherford, Texas Municipal League, City of Irving, NCTCOG, Holes, Inc., Mag Creek, L.P., The Williams and Beasley Co., R.E. Cupp Construction, J.L. Steel, Inc., American Subcontractors Association-North Texas Chapter, Texas Air Crisis Campaign,Williams Brothers Construction Co., Inc., Granite Construction Co., McClendon Construction Co., Inc., Pete Durant & Associates, Inc., Texas Aggregates & Concrete Association, Cullum Construction Co., Tommy Ford Construction Company, Greater Houston Builders Association, T.J. Lambrecht Construction, McAllen Construction, Inc., North Texas Bridge Co., Inc., Hunter Industries, Inc., Basden Steel Corp., Pipelayers, Inc., Houston Construction Industry Coalition, The International Association of Foundation Drilling, the Texas Industry Project, TxDOT, ARTBA, Business Coalition for Clean Air, M. Hanna Construction Co., Inc., Gaughan & Stone, Associated Builders & Contractors of Greater Houston, D & T Contracting, Inc., Representative Tommy Merritt, Exxon Mobil Chemical Co., City of Lewisville, Senior Citizens Alliance of Tarrant County, Senior Political Action Committee, Texas Air Crisis Campaign, John S. Wofford, East

End Lumber Co., Texas Chemical Council (TCC), Dow Chemical Co., L.E. Beavers Corp., and 160 individuals.

AGC of Texas commented that statistics available from the Federal Highway Administration and TxDOT and Texas Department of Public Safety show that almost half of all accidents occur after dusk with only 18% of the traffic volume in minimal construction. According to a study conducted by research groups of the Texas Transportation Institute of five long-term freeway reconstruction projects, nighttime accident frequency increased an average of 37.4% in these construction zones compared to an average 24.4% increase in daytime accident frequency. THMAPA and the TPPF commented that nighttime construction project accidents increase by more than 40% over daytime accidents.

The commission recognizes that this rule may result in increased exposure to elevated temperatures and increased fatigue and risk for accidents and injury. However, operators would be expected to take all necessary measures to protect the health and safety of their employees and educate them about potential risks. The commission does not have the capability or authority to regulate worker safety. The ultimate responsibility of the commission with these rules is to maintain and improve air quality and public health in the DFW area. Regarding the safety concerns over the dangers of working in the evening hours with decreased visibility, the change to Daylight Savings Time will extend the daylight hours during the period of the year the rule will be in effect. The increased daylight hours will minimize any potential risks associated with low visibility.

The commission also recognizes that this rule may cause certain disruptions to the personal and social lives of affected employees. However, the restriction on hours of operation is an essential component to the overall strategy to reduce peak ozone levels to enable the DFW area to attain federal ozone standards. The area's failure to attain these standards will significantly impact the area's economy, and therefore the quality of life of its citizens. The restriction on hours of operation prescribed by this rule is based upon modeling that demonstrates that shifting the NO_x emissions associated with the operation of construction equipment to later in the day removes those emissions from the air during the critical time during which they mix to later form ozone, and effectively reduces peak ozone levels.

The shift will be difficult to implement and enforce. Enforcement will most likely be the responsibility of local governments who may not have the necessary resources to ensure compliance. This comment was made by TPPF, AGC of Texas, THMAPA, Dallas and Fort Worth Chapters of the AGC, Lone Star Chapter of the Sierra Club, Martin K. Eby Construction Co., Inc., Crabtree Barricade Systems, Inc., Murray Construction Co., Inc., J-N Construction Co., Inc., Associated Builders and Contractors, Inc., Gibson & Associates, Inc., Stirling Wainscott Builders, Inc., Jim Johnson Homes, U.S. Home, LeMay Homes, Tri City Homes, Barnes Builders, Long Custom Homes, Ray Tonjes Builder, Inc., Steiner Ranch, Sterling Development Company, Holmes Homes, Marsters Company, Don Schmerse Custom Homes, Tommy Bailey Homes, Inc., Basden Steel Corporation, Kaufman & Broad, Brother Strong, A & J Construction, Inc., Coats, Rose, Yale, Ryman, & Lee, Emerald Builders, Belmont Custom Homes, Randy Haugh Construction Company, Texas Association of Builders, Terrell Pruett, Home Builders Association of Greater Dallas, Danis Environmental Industries, Inc., BGR Specialties, Anchor Roofing Systems, Ltd., Sedalco, Inc., Wilson Construction Systems, Inc., Buster Paving, Fisher Pearson, Inc, Linbeck

Construction Corporation, Ram Steel Company, Inc., C.B.C. Masonry, Inc., Reynolds Asphalt and Construction Co., Branch and Sons Contractors, Inc., Reed Plumbing, Inc., Morgan & Associates, Inc, Richard Carr Construction Company, Andres Construction Services, Bob McCaslin Precast Construction Co., Double Eagle Foundation Drilling, Lyness Construction, Inc., Howard F. Kane Plumbing Co., Inc., IESI Corporation, Texas Shafts, Inc., Walker Building Corporation, CCI Manufacturing, Inc., Texas Building Branch - AGC, Orval Hall Excavating Co., Sierra Demolition & Excavation, Inc., H & H Steel Fabricators, Inc., Gomez Service Corporation, City of Cleburne, TxSWANA, Silver Creek Materials Recycling and Compost, Texas Air Crisis Campaign, Pete Durant & Associates, Inc., Texas Aggregates & Concrete Association, Long Lake, Ltd., Thompson & Knight, Senior Citizens Alliance of Tarrant County, Senior Political Action Committee, League of Women Voters of Dallas, American Lung Association-Dallas Regional Office, Citizens for a Safe Environment, Downwinders at Risk, Sustainable Economic & Environmental Development, Texas Campaign for the Environment, Texas Clean Water Action, Texas Public Citizen, TXI, and 202 individuals.

The commission disagrees with this comment. Implementation by the operator of the construction equipment involves completing an operations log each day he operates the equipment. Regarding the restriction on the time that affected equipment is permitted to be used, the commission expects that operators will make the necessary adjustments to project schedules to accommodate the change in hours of operation. The commission has offered an exemption under §114.437(b) which will allow operators who submit an emissions reduction plan by May 31, 2002 that is approved by the executive director and the EPA by May 31, 2003 to operate during the hours restricted by the rule. The plan must describe in detail how the operators will modify their behavior or fleet of equipment to reduce

NO_x emissions by June 1, 2005 by an amount equivalent to the total NO_x reductions achieved by implementation of this rule and the Accelerated Purchase of Non-road Heavy-duty Diesel Equipment rule. In order to be approved, the plan must demonstrate reductions of NO_x equivalent to those required by both §114.412 (Accelerated Purchase rule) and §114.432, and must contain adequate enforcement provisions. In addition, federal controls such as cleaner diesel fuel and cleaner-burning diesel engines have been proposed and are scheduled to be implemented in 2002 and 2004, respectively. The commission anticipates that these controls will also offer operators flexibility in complying with the rule and minimize any difficulties in its implementation.

Enforcement of the rule can be achieved through two methods: on-site inspection and/or record review. The commission anticipates that the primary method of enforcement will be through record review, for which the commission would survey projects in a defined area to produce a list of companies to contact for copies of records. The commission has reworded §114.436(a), (b), and (c) to make the language consistent with §114.432 and has expanded §114.436(b) to allow other air pollution programs with jurisdiction to request records for review. Additionally, compliance will be determined by on-site investigations, both routinely scheduled and in response to citizen complaints. Commission or local investigators may also conduct an on-site investigation when they are in an area in which affected equipment is being used. The commission agrees that some enforcement responsibilities will fall on local entities, as it will be a cooperative effort. Because maintaining and improving air quality is vital to the health and welfare of all the citizens in the DFW area, local entities have a vested interest in enforcing the rule and enabling compliance with it.

This strategy has not been implemented or attempted anywhere else in the United States. This comment was made by TPPF, Jagoe, Boring and Tunneling Company of America, AGC of Texas, Texas Building Branch - AGC, Dallas Chapter of the AGC, Houston Construction Industry Coalition, and Meridian Aggregates Company.

The commission acknowledges that this strategy has not previously been implemented. However, the commission's justification for implementing this strategy in Texas is based on modeling specific to Texas which shows that construction equipment makes a significant contribution to DFW area NO_x emissions. Using the Base 4d modeling emissions inventory, commission staff estimated that area and non-road emissions make up 33% of all NO_x emissions in the DFW area. Staff calculated that 48% of the emissions from area and non-road emissions inventory come from construction equipment which amounts to 16% of the region's total NO_x emissions. In the Base 4d inventory, the amount of emissions from construction equipment in the DFW 12-county CMSA was approximately 82 tons per day. Since the time the steering committee made its recommendation, two significant changes have taken place which affect the analysis. First, the construction equipment emissions were significantly revised in the Base 6a inventory. Second, the commission has reduced the spatial extent of the rule governing hours of operation to now include only the four nonattainment counties, instead of the entire 12-county CMSA. The 1996 construction equipment NO_x emission total for the four nonattainment counties in the Base 6a modeling inventory is now 50.6 tons/day. The non-road mobile source category is one of the few sources of ozone-causing emissions that is not currently regulated. Federal controls such as cleaner diesel fuel and cleaner-burning diesel engines have been proposed and are scheduled to be implemented in 2002 and 2004, respectively. The commission anticipates that

these controls will also offer operators flexibility in complying with the rule. In addition, the commission has offered an exemption under §114.437(b), which will allow operators who submit an emissions reduction plan by May 31, 2002 that is approved by the executive director and EPA by May 31, 2003 to operate during the hours restricted under the rule. The plan must describe in detail how the operators will modify their behavior or fleet of equipment to reduce NO_x emissions by June 1, 2005 by an amount equivalent to the total NO_x reductions achieved by implementation of this rule and the Accelerated Purchase of Non-road Heavy-duty Diesel Equipment rule. In order to be approved, the plan must demonstrate reductions of NO_x equivalent to those required by both §114.412 (Accelerated Purchase rule) and §114.432, and must contain adequate enforcement provisions. This exemption offers additional flexibility.

The strategy was also recommended by the steering committee, representing the DFW ozone nonattainment area counties, which requested the control strategy as part of the DFW Attainment Demonstration to reduce ground level ozone in order to enable the area to attain the NAAQS for ozone. At the request of the steering committee, the commission developed the construction equipment operating restriction.

The shift will conflict with municipal and contractual restrictions/ordinances on hours of operation and noise. It is common for the Texas Department of Transportation to prohibit lane closures during peak rush hours. Some contracts require equipment to cease operation by sunset. This comment was made by TPPF, AGC of Texas, Jagoe, Home Builders Association of Greater Dallas (HBA), OHC, Boring and Tunneling Company of America, Dallas and Fort Worth Chapters of the AGC, Martin K. Eby Construction Co., Inc.,

Crabtree Barricade Systems, Inc., Murray Construction Co., Inc., J-N Construction Co., Inc., Associated Builders and Contractors, Inc., Gibson & Associates, Inc., Stirling Wainscott Builders, Inc., Jim Johnson Homes, U.S. Home, LeMay Homes, Tri City Homes, Barnes Builders, Long Custom Homes, Ray Tonjes Builder, Inc., Steiner Ranch, Sterling Development Company, Holmes Homes, Marsters Company, Don Schmerse Custom Homes, Tommy Bailey Homes, Inc., Basden Steel Corporation, Kaufman & Broad, Brother Strong, A & J Construction, Inc., Coats, Rose, Yale, Ryman, & Lee, Emerald Builders, Belmont Custom Homes, Randy Haugh Construction Company, Texas Association of Builders, Terrell Pruett, Home Builders Association of Greater Dallas, R.E. Cupp Construction, Oakcrest Homes, Cullum Construction Co., Tommy Ford Construction Company, APAC-Texas, Greater Houston Builders Association, T.J. Lambrecht Construction, McAllen Construction, Inc., Williams Brothers Construction Co., Long Lake, Ltd., L.E. Beavers Corp., and six individuals.

The commission disagrees that the rule will conflict with local noise ordinances. This rule does not authorize any violation of local ordinances. It may be that equipment operators will desire to work later hours to compensate for time lost in the early morning. If this is true, communities may wish to reevaluate their current ordinances and determine what is best for their community. Because maintaining and improving air quality, for which this rule is designed, is vital to the health and welfare of all the citizens in the DFW area, local entities have a vested interest in taking measures necessary to enable compliance with the rule.

The shift will not reduce emissions but shift them to another part of the day, which could result in disapproval of the SIP by EPA. This strategy will therefore not benefit the environment. The model used

to analyze the scope of the problem and the costs/benefits of the shift was inadequate/faulty and overestimated emissions and equipment numbers while underestimating the economic burden placed on the industry. This comment was made by the Lone Star Chapter of the Sierra Club, AGC of Texas, Jagoe, HBA, THMAPA, Councilman Oscar Trevino, National Motorists Association, Dallas and Fort Worth Chapters of the AGC, OHC, Trinity, Green Party, UMCA, Martin K. Eby Construction Co., Inc., Crabtree Barricade Systems, Inc., Murray Construction Co., Inc., J-N Construction Co., Inc., Associated Builders and Contractors, Inc., Gibson & Associates, Inc., Stirling Wainscott Builders, Inc., Jim Johnson Homes, U.S. Home, LeMay Homes, Tri City Homes, Barnes Builders, Long Custom Homes, Ray Tonjes Builder, Inc., Steiner Ranch, Sterling Development Company, Holmes Homes, Marsters Company, Don Schmerse Custom Homes, Tommy Bailey Homes, Inc., Basden Steel Corporation, Kaufman & Broad, Brother Strong, A & J Construction, Inc., Coats, Rose, Yale, Ryman, & Lee, Emerald Builders, Belmont Custom Homes, Randy Haugh Construction Company, Texas Association of Builders, Terrell Pruett, Home Builders Association of Greater Dallas, Danis Environmental Industries, Inc., BGR Specialties, Anchor Roofing Systems, Ltd., Sedalco, Inc., Wilson Construction Systems, Inc., Buster Paving, Fisher Pearson, Inc, Linbeck Construction Corporation, Ram Steel Company, Inc., C.B.C. Masonry, Inc., Reynolds Asphalt and Construction Co., Branch and Sons Contractors, Inc., Reed Plumbing, Inc., Morgan & Associates, Inc, Richard Carr Construction Company, Andres Construction Services, Bob McCaslin Precast Construction Co., Double Eagle Foundation Drilling, Lyness Construction, Inc., Howard F. Kane Plumbing Co., Inc., IESI Corporation, Texas Shafts, Inc., Walker Building Corporation, CCI Manufacturing, Inc., Texas Building Branch - AGC, Orval Hall Excavating Co., Sierra Demolition & Excavation, Inc., H & H Steel Fabricators, Inc., Gomez Service Corporation, City of Cleburne, Waste Management, Watauga Texas, Texas Municipal League, National Solid Waste Management Association,

City of Carrollton, City of Garland, J.L. Steel, Inc., American Subcontractors Association-North Texas Chapter, Texas Aggregates & Concrete Association, Cullum Construction Co., Tommy Ford Construction Company, APAC-Texas, North Texas Bridge Co., Inc., Hunter Industries, Inc., Basden Steel Corp., Pipelayers, Inc., Houston Construction Industry Coalition, The International Association of Foundation Drilling, the Texas Industry Project, TxDOT, ARTBA, Thompson & Knight, Texas Nursery & Landscape Association, City of Everman, John S. Wofford, East End Lumber Co., League of Women Voters of Dallas, American Lung Association-Dallas Regional Office, Citizens for a Safe Environment, Downwinders at Risk, Sustainable Economic & Environmental Development, Texas Campaign for the Environment, Texas Clean Water Action, Texas Public Citizen, Representatives Sue Palmer and Jerry Madden, City of Greenville, TXI, HVAC Testing Company, and 203 individuals.

TPPF cited independent research involving case studies in the DFW area that shows that only 1.0% of the NO_x emissions in the area can be attributed to off-road construction equipment, which is less than one-tenth of the value presented by TNRCC. Waste Management referred to this study in their comments.

American Subcontractors Association-North Texas Chapter and the Dallas Chapter of the AGC commented that the predictions made by the model, showing that by the year 2007 there will be 95,000 pieces of off-road heavy-duty diesel equipment in the 12-county CMSA, overestimate the area's growth.

The commission is required to use a federally-recognized and approved model for developing data that will be used to demonstrate attainment with the SIP. The commission used the most state-of-the-art photochemical methodologies to develop this rule. The Comprehensive Air Model

with Extensions (CAMx) model that was used is the latest version of the photochemical model recognized by EPA for SIP modeling. Originally, the Non-Road Equipment and Vehicle Emissions Survey (NEVES) was used in the Houston area to compile an inventory of construction equipment and associated emissions, and the DFW inventory was developed by extrapolating the Houston-area emissions to DFW using appropriate surrogates such as population. More recently, the NCTCOG developed an improved inventory for the DFW area, using updated data but still relying largely on the top-down methods used in the NEVES study. These NCTCOG-derived emissions were used in modeling performed with the Base 4d and Base 5 inventories. At the same time that the proposed attainment plan was being developed, the commission was collaborating with Eastern Research Group (ERG) on a bottom-up study to enhance and improve the construction equipment inventory in Houston, surveying for the type of equipment being used, the number of pieces of each type of equipment used, the hours the equipment is used, and the purpose for which the equipment is being used. The ERG study determined the usefulness of other surrogates to use for the DFW area, such as construction equipment sales, to enable the commission to further enhance the modeling for the DFW area. This effort has provided the commission with a much-improved inventory of construction equipment emissions in the Houston and DFW areas, and resulted in the revisions incorporated into the Base 6 and Base 6a modeling. Even though the revised inventory has greatly reduced the uncertainty in the construction equipment emissions, the commission continually seeks to improve its inventories. Delaying the rule's effective date to 2005 will afford the commission additional time and opportunity to further address concerns with all aspects of the existing emissions inventory and modeling and make any necessary adjustments to the DFW construction equipment inventory.

While it is true that the restriction on morning hours of operation will not directly reduce emissions, it will reduce peak ozone concentrations by shifting the emissions of ozone-forming chemicals (precursors) to later in the day, past the peak time of ozone formation. During the afternoon hours, the less stagnant air and lack of a low-altitude "cap" on the lower atmosphere often present in the morning allow for more vertical mixing of ozone precursors with "cleaner" air, reducing the combination of the precursors to form ozone. Also, delaying precursor emissions to later in the day reduces the amount of time they are allowed to combine to form ozone. It is important to note that the ultimate goal of the Clean Air Act is not to reduce emissions of ozone precursors, but to reduce ozone levels. The reduction in peak ozone levels will benefit human health and the environment.

TxSWANA, Silver Creek Materials Recycling and Compost, and the City of Garland commented that they are not aware of any analysis prepared by the TNRCC to assess whether restricting diesel equipment activity at solid waste management facilities will result in significant reductions of NO_x to meaningfully reduce the amount of ozone formation later in the day. TxSWANA performed preliminary calculations of DFW area NO_x emissions from landfill construction equipment using information from its members and TNRCC records. The purpose of the calculations was to estimate a conservative worst-case emission inventory from all 25 MSW landfills in the 12-county DFW area. Their calculations showed that the emissions from DFW-area landfills represent only 2.9% of the year 2007 daily NO_x emissions for area and non-road sources (157 tons) and only 1.0% of the total daily year 2007 NO_x emissions (484 tons). TxSWANA seriously questions whether deferring 1.0% of daily NO_x emissions until after 10:00 a.m. will have any meaningful effect on peak afternoon ozone concentrations.

In response to a request by NCTCOG Resource Conservation Council, NCTCOG staff conducted a study to calculate anticipated NO_x emissions from construction equipment operating at landfills in the DFW four-county non-attainment area from 6:00 to 10:00 a.m. in 2007. NCTCOG staff aimed to correct methodology omissions and refine estimates used in the SWANA estimate of landfill emissions for the 16-county North Central Texas region. NCTCOG staff contacted five representative landfills that each accepted an average amount of waste that was close to the average annual amount accepted by the 17 landfills in the four-county DFW area in 1998. NCTCOG staff then surveyed these five landfills to obtain the number and types of construction equipment they operate, the horsepower of this equipment, and the number of hours each piece of equipment would typically be operated between 6:00 a.m. to 10:00 a.m. This information was then used, along with equipment load factors obtained from the EPA NEVES 1991 report as well as equipment emission factors, taking into account the requirements of the Accelerated Purchase rules, to calculate the emissions from each landfill. The results of NCTCOG's study showed that the total emissions from 6:00 a.m. to 10:00 a.m. for the 17 landfills in the four-county DFW area for the year 2007 would be 0.327 tons per day of NO_x and hydrocarbons (since the Tier 2/Tier 3 standards do not separate NO_x emissions from hydrocarbon emissions, and since manufacturers have not yet started producing Tier 2 and Tier 3 equipment, NO_x emissions could not be predicted separately from hydrocarbon emissions; thus, the emissions predicted represent an upper limit on NO_x emissions). Even considering this, 0.327 tons per day is above the de minimis level for NO_x and VOC for the DFW nonattainment area, which is 0.14 tons per day. Therefore, the commission cannot exempt construction equipment used at landfills as de minimis, and must adopt the rule regulating this equipment.

Boring and Tunneling Company of America, Waste Management, Texas Aggregates & Concrete Association, APAC-Texas, Inc., and AGC of Texas commented that Commissioner Marquez acknowledged the questionable nature of the emissions inventory in a letter dated May 1999 to the Houston Regional Coalition Stakeholders.

The commission is working on resolving any anomalies that exist with the current emissions inventory for construction equipment. The commission is required to use a federally-recognized and approved model for developing data that will be used to demonstrate attainment with the SIP. The commission used the most state-of-the-art photochemical methodologies to develop this rule. The Comprehensive Air Model with Extensions (CAMx) model that was used is the latest version of the photochemical model recognized by EPA for SIP modeling. Originally, the Non-Road Equipment and Vehicle Emissions Survey (NEVES) was used in the Houston area to compile an inventory of construction equipment and associated emissions, and the DFW inventory was developed by extrapolating the Houston-area emissions to DFW using appropriate surrogates such as population. More recently, the NCTCOG developed an improved inventory for the DFW area, using updated data but still relying largely on the top-down methods used in the NEVES study. These NCTCOG-derived emissions were used in modeling performed with the Base 4d and Base 5 inventories. At the same time that the proposed attainment plan was being developed, the commission was collaborating with Eastern Research Group (ERG) on a bottom-up study to enhance and improve the construction equipment inventory in Houston, surveying for the type of equipment being used, the number of pieces of each type of equipment used, the hours the equipment is used, and the purpose for which the equipment is being used. The ERG study determined the usefulness of other surrogates to use for the DFW area,

such as construction equipment sales, to enable the commission to further enhance the modeling for the DFW area. This effort has provided the commission with a much-improved inventory of construction equipment emissions in the Houston and DFW areas, and resulted in the revisions incorporated into the Base 6 and Base 6a modeling. Even though the revised inventory has greatly reduced the uncertainty in the construction equipment emissions, the commission continually seeks to improve its inventories. Delaying the rule's effective date to 2005 will afford the commission additional time and opportunity to further address concerns with all aspects of the existing emissions inventory and modeling and make any necessary adjustments.

TxDOT commented that a review of 1997-1999 ozone data for the DFW area did not locate any violations on weekends. Therefore, TxDOT and Thompson & Knight recommend that the shift apply only Monday through Friday. TxDOT also commented that according to 1997-1999 statistics for the DFW area indicated that there were no days when the ozone standard was exceeded from January through June, and October through December. Therefore, TxDOT recommended that the rule be limited from July 1 through September 30.

The commission concurs that no exceedances of the one-hour ozone standard have occurred on a Sunday in the DFW area from 1990-1998. However, eight exceedances of the one-hour standard were recorded on Saturdays in the DFW area during this time period. The commission disagrees that no exceedances of the one-hour ozone standard have occurred before July. While there were no exceedances of the one-hour ozone standard in the DFW area from January through May 1990-1998, 12 exceedances of the one-hour ozone standard occurred in the month of June during this time

period. The commission disagrees that no exceedances of the one-hour ozone standard occurred in the DFW area for the months of October through December 1990-1998. There was one exceedance of the one-hour ozone standard in October of 1994. Because ozone exceedances have historically occurred on Saturdays as well as in June and October, the commission cannot justify lifting the ban for this day or these months. The DFW area historically does not experience monitored ozone exceedances on Sunday (and only rarely on Saturday). This phenomenon is almost certainly related to reduced motor vehicle activity on weekend mornings, but likely is also partially related to reductions in other types of activities including construction. The risk to human health and the environment would outweigh the benefits gained by lifting the ban on days when ozone exceedances are less likely to occur. The commission must ensure that public health is protected to the utmost extent possible, and cannot place the public's health in jeopardy based on insufficient scientific and technological justification.

Suppliers and businesses providing other services to the jobsite (materials handlers) that work only during traditional business hours will not be available during after-hour work, further delaying projects. This comment was made by CXTG , R.E. Cupp Construction, Greater Houston Builders Association, T.J. Lambrecht Construction, AGC of Texas, Business Coalition for Clean Air, Meridian Aggregates Company, and TCC.

The commission disagrees with this comment. The commission anticipates that suppliers of goods and services to companies affected by this rule will shift their hours of operation accordingly to retain

customers and maintain their businesses. This will enable affected companies to both comply with the rule and continue to operate.

The shift penalizes those companies that have upgraded their equipment to be in compliance with emissions limits. This comment was made by T.J. Lambrecht Construction, and Engine Manufacturers Association.

The commission disagrees with this comment. The exemption offered under §114.437(b) will allow operators who submit an emissions reduction plan by May 31, 2002 that is approved by the executive director and the EPA by May 31, 2003 to operate during the hours restricted under the rule. The plan must describe in detail how the operators will modify their behavior or fleet of equipment to reduce NO_x emissions by June 1, 2005 by an amount equivalent to the total NO_x reductions achieved by implementation of this rule and the Accelerated Purchase of Non-road Heavy-duty Diesel Equipment rule. In order to be approved, the plan must demonstrate reductions of NO_x equivalent to those required by both §114.412 (Accelerated Purchase rule) and §114.432, and must contain adequate enforcement provisions. In addition, federal controls such as cleaner diesel fuel and cleaner-burning diesel engines have been proposed and are scheduled to be implemented in 2002 and 2004, respectively, that will also offer operators who choose to implement these technologies flexibility in complying with the rule.

The quality of the finished projects will suffer due to impaired night visibility and worker fatigue. The difficulty of performing certain activities at night when visibility is impaired will likely cause errors and failures of materials. This comment was made by THMAPA, Councilman Oscar Trevino, AGC of Texas,

Martin K. Eby Construction Co., Inc., Crabtree Barricade Systems, Inc., Murray Construction Co., Inc., J-N Construction Co., Inc., Gibson & Associates, Inc., J.L. Steel, Inc., McAllen Construction, Inc., Williams Brothers Construction Co., Pipelayers, Inc., CCI Manufacturing, Inc., M. Hanna Construction Co., Inc., and L.E. Beavers Corp.

The commission disagrees with this comment. The change to Daylight Savings Time will extend the daylight hours during the period of the year the rule will be in effect. The increased daylight hours will minimize any potential risks or quality problems associated with low visibility. In addition, the commission expects that affected companies will take necessary measures to ensure the quality of finished products, in order to retain customers and attract new business.

Rather than limiting or shifting hours of operation to control ozone formation, establish emission limits for equipment, and allow the industry to determine the most feasible, cost-effective way to meet those limits. This comment was made by Tommy Ford Construction Company and Meridian Aggregates Company.

The commission does not currently have a method for establishing or implementing emissions limits for construction equipment. However, delaying the effective compliance date to 2005 will afford the commission additional time and opportunity to further study and refine the existing emissions inventory and modeling to determine the feasibility of implementing emissions limits for this type of equipment as a way to provide operators additional flexibility in complying with the rule. In addition, the commission has offered an exemption under §114.437(b), which will allow operators who submit an emissions reduction plan by May 31, 2002 that is approved by the executive director

or the EPA by May 31, 2003 to operate during the hours restricted under the rule. The plan must describe in detail how the operators will modify their behavior or fleet of equipment to reduce NO_x emissions by June 1, 2005 by an amount equivalent to the total NO_x reductions achieved by implementation of this rule and the Accelerated Purchase of Non-road Heavy-duty Diesel Equipment rule. In order to be approved, the plan must demonstrate reductions of NO_x equivalent to those required by both §114.412 (Accelerated Purchase rule) and §114.432, and must contain adequate enforcement provisions. Also, federal controls such as cleaner diesel fuel and cleaner-burning diesel engines have been proposed and are scheduled to be implemented in 2002 and 2004, respectively. The commission anticipates that these measures will offer operators additional flexibility in complying with the rule.

Provide incentives (i.e., tax breaks, emission reduction credits) to encourage companies to shift work hours to off-peak ozone formation times rather than require the entire industry to shift hours of operation. This comment was made by Dallas/Fort Worth International Airport, Tommy Ford Construction Company, Meridian Aggregates Company, Engine Manufacturers Association, and Dallas Chapter-AGC.

The commission currently has no mechanism to offer these types of incentives. However, the commission is considering the feasibility of allowing affected companies to participate in the open market emissions banking and trading program by either purchasing ERCs to allow them to operate during the restricted hours, or for companies that use equipment with lower emissions, by selling ERCs. Delaying the effective compliance date to 2005 will afford the commission additional time and opportunity to further study the feasibility of ERC trading as a way to provide operators additional

flexibility in complying with the rule. The commission requested comments on what, if any, emission banking and trading program should be developed to offer alternative means of compliance for facilities required to make NO_x reductions for SIP purposes. The commission is exploring the possibility of either the creation of a mass cap and trade system or revising the existing emission banking and trading system in Chapter 101, General Air Quality Rules, §101.29, concerning Emissions Banking and Trading. The commission intends to propose a comprehensive trading system during summer 2000. The commission believes it is appropriate to develop a holistic approach to emission trading, as opposed to a piecemeal approach. As noted in the rule proposal preamble, the commission is open to accepting all ideas regarding an emission trading program. Comments on emission trading will not be addressed as part of this rulemaking, but will be addressed when the commission considers its banking and trading program during summer 2000.

The additional recordkeeping requirements are duplicative and unfairly burdensome. This comment was made by Texas Aggregates & Concrete Association, Meridian Aggregates Company, TCC, and one individual.

The commission disagrees with this comment. The information needed for the operating records can be easily recorded and assembled. Additionally, the records retention requirement is not overly burdensome. The commission anticipates that affected companies will devise methods necessary to make the recordkeeping process as expedient and minimally burdensome as possible. In addition, companies that wish to claim the exemption offered in §114.437(b) will need to keep these records to prove their compliance with the conditions of the exemption.

Lockheed Martin requested the deletion of the requirement to keep records of the name of the equipment operator, and suggested that electronic monitoring systems could be installed on the equipment to automatically record the date and hours of operation, reducing the reporting burden for the operator.

The name of the equipment operator is required because it gives the agency with jurisdiction to review the records the necessary witness link to verify the authenticity of the records during a records review. Regarding automatically recording the date and hours of operation, the commission has no objection to this, but this data would still have to be included as part of the records maintained by the operator. If data is being electronically recorded, the operator should be able to download that data and automatically generate reports, thereby achieving the desired reduction in manual recordkeeping.

Meridian Aggregates Company suggested that permitted facilities be allowed to include with their annual air emissions inventory a section that specifically reports air emissions from their diesel equipment rather than to complete separate paperwork.

The commission disagrees with this comment. The emissions inventory must be submitted to the commission each year. Facilities are not required to submit the records required to be kept by this rule, but merely complete and retain them at the job site and after termination of the project, retain them for two years. Therefore, including emissions data from a facilities' construction equipment and submitting it with the emissions inventory would not be required. In addition, facilities are not

required to keep records of equipment emissions under this rule, but rather the dates and times of equipment operation and the type of equipment used. This type of information would be extraneous if included with the annual emissions inventory.

TCC suggested the deletion of the requirement to keep records of start and end times for all impacted equipment. For a typical chemical plant with 50-200 pieces of impacted equipment, it is estimated that the number of log entries required daily could exceed 500.

The commission must require the recording of the hours of operation of each piece of equipment to enable the air pollution program with enforcement jurisdiction to determine a company's compliance with the rule. The commission expects that affected companies will devise a method suitable for their specific operations that will make this recordkeeping as expeditious and efficient as possible.

Exempt from the shift new and retrofitted equipment with already reduced emissions. This comment was made by the Dallas Chapter of the AGC, Trinity, California Natural Gas Coalition, Society of Automotive Engineers, Fort Worth Chamber of Commerce, City of Farmers Branch, City of Plano, the Texas Industry Project, TxDOT, Dallas/Fort Worth International Airport, and one individual.

The commission offered an exemption under §114.437(b), which will allow operators who submit an emissions reduction plan by May 31, 2002 that is approved by the executive director and the EPA by May 31, 2003 to operate during the hours restricted under the rule. The plan must describe in detail how the operators will modify their behavior or fleet of equipment to reduce NO_x emissions by June

1, 2005 by an amount equivalent to the total NO_x reductions achieved by implementation of this rule and the Accelerated Purchase of Non-road Heavy-duty Diesel Equipment rule. In order to be approved, the plan must demonstrate reductions of NO_x equivalent to those required by both §114.412 (Accelerated Purchase rule) and §114.432, and must contain adequate enforcement provisions. In addition, federal controls such as cleaner diesel fuel and cleaner-burning diesel engines have been proposed and are scheduled to be implemented in 2002 and 2004, respectively. The commission anticipates that these measures, in addition to new and retrofit emission-reduction technology anticipated to be available in the next few years, will offer operators additional flexibility in complying with the rule. Also, delaying the rule's effective date to 2005 will afford the commission additional time and opportunity to further study and refine the existing emissions inventory and modeling to determine the feasibility of using cleaner fuels and equipment as a way to provide operators additional flexibility in complying with the rule. The delay in implementation will also allow manufacturers to accelerate their research and development of cleaner fuel and engine technology, which will afford more companies the opportunity to claim the exemption offered under §114.437(b) when the rule becomes effective.

Improve ability to predict ozone-action days and only enact the ban when ozone-action days are predicted. This comment was made by the Dallas Chapter of the AGC and Tommy Ford Construction Company.

The commission lacks sufficient historical data on ozone action day prediction, as well as the technology to improve upon prediction accuracies to warrant changing the rule to only enact the equipment operating use restriction on ozone action days. This lack of sufficient data and technology

in ozone-action day prediction capabilities would pose a risk to human health and the environment greater than the benefits gained by lifting the ban on days when ozone action days are not predicted. The commission must ensure that public health is protected to the utmost extent possible, and cannot place the public's health in jeopardy based on inadequate scientific and technological justification. Hood County Commissioner Ron Cullers commented that there is no evidence that the transport of NO_x generated in Hood County impacts the four nonattainment counties, and that NO_x testing of Hood County air has not been done to prove that a problem exists in this county.

The commission has eliminated Hood County from the counties covered by this rule; therefore, this comment is no longer pertinent.

The shift will increase emissions due to increased idling while equipment waits to operate and idling from traffic delays, emissions from lighting needed for working after dark, and because more equipment will have to be used to compensate for lost productivity and time. This comment was made by J.D. Abrams, Inc., Allied, Waste Management, City of Irving, National Solid Waste Management Association, R.E. Cupp Construction, American Subcontractors Association-North Texas Chapter, AGC of Texas, The International Association of Foundation Drilling, the Texas Industry Project, Williams Brothers Construction Co., Ram Steel Co., Senator Tom Haywood, Boley-Featherton Insurance, and one individual.

TxSWANA commented that increased congestion of idling collection vehicles at landfills, transfer stations, and composting facilities during the 6:00 to 10:00 a.m. time frame (due to operational delays) will nullify or even outweigh any perceived benefits from reduced diesel equipment activity at solid waste management

facilities. Waste Management, City of Carrollton, and Texas Municipal League echoed these concerns in their comments.

Allied and the International Association of Foundation Drilling commented that to give a more accurate measurement of actual emissions, the study should have compared the emissions of one engine with improved fuel in the morning with the emissions of two engines in the afternoon, because many companies will have to use more equipment to compensate for lost time.

While the commission recognizes that increased emissions may occur in the afternoon from lighting and the compensatory use of more equipment, these emissions are occurring well past the critical time period during which ozone-forming emissions combine to eventually form ozone. Therefore, these emissions would not cause a significant increase in ozone levels.

Regarding equipment idling at landfills while waiting until after 10:00 a.m. to unload, the commission will support voluntary "no idling" policies that prohibit collection trucks from idling during this time and will encourage landfill operators and local communities to enact policies to mandate "no idling" at their facilities to minimize emissions. Also, emissions from waste collection vehicles, which are on-road heavy-duty diesel vehicles, are already significantly regulated in that currently, all diesel-powered vehicles and equipment registered to be used on-road must use federally certified on-road diesel fuel. Operators of on-road heavy-duty diesel vehicles and equipment are also assessed a federal diesel fuel tax. In addition, on-road diesel vehicles and equipment are included in the low emission diesel fuel rule for the DFW area. That rule requires the use of diesel fuel with a maximum sulfur

content of 500 ppm, a maximum of 10% aromatics, and a minimum cetane rating of 48. Under those rules, all DFW-area diesel powered compression ignition engines, both on-road and non-road, will be required to use low emission diesel when refueling within the control area. Therefore, emissions from waste collection trucks are already less polluting than those from non-road diesel equipment, and are less harmful to human health and the environment.

Accelerate the conversion to cleaner fuels and equipment, such as catalytic converters and other retrofits, rather than enact the shift. This comment was made by the Dallas Chapter of the AGC, Trinity, California Natural Gas Coalition, Society of Automotive Engineers, City of Irving, NCTCOG, R.E. Cupp Construction, Tommy Ford Construction Company, APAC-Texas, Houston Construction Industry Coalition, TxDOT, Gaughan & Stone, Associated Builders & Contractors of Greater Houston, D & T Contracting, Inc., McClendon Construction Co., Inc., Meridian Aggregates Company, Environmental & Chemical Technology, Inc., HVAC Testing Company, Engine Manufacturers Association, and five individuals.

The commission has offered an exemption under §114.437(b), which will allow operators who submit an emissions reduction plan by May 31, 2002 that is approved by the executive director and the EPA by May 31, 2003 to operate during the hours restricted under the rule. The plan must describe in detail how the operators will modify their behavior or fleet of equipment to reduce NO_x emissions by June 1, 2005 by an amount equivalent to the total NO_x reductions achieved by implementation of this rule and the Accelerated Purchase of Non-road Heavy-duty Diesel Equipment rule. In order to be approved, the plan must demonstrate reductions of NO_x equivalent to those required by both

§114.412 (Accelerated Purchase rule) and §114.432, and must contain adequate enforcement provisions. In addition, federal controls such as cleaner diesel fuel and cleaner-burning diesel engines have been proposed and are scheduled to be implemented in 2002 and 2004, respectively. The commission anticipates that these measures will offer operators additional flexibility in complying with the rule. Also, delaying the rule's effective date to 2005 will afford the commission additional time and opportunity to further study and refine the existing emissions inventory and modeling to determine the feasibility of using cleaner fuels and equipment as a way to provide operators additional flexibility in complying with the rule. The delay in implementation will also allow manufacturers to accelerate their research and development of cleaner fuel and engine technology, which will afford more companies the opportunity to claim the exemption offered under §114.437(b) when the rule becomes effective.

Regarding post-combustion emission controls, several technologies are under research and development; however, effective technology is not currently available. No commercially available NO_x control retrofits currently exist. A technology known as $SCONO_x$ for diesel engines is currently under development by Cummins Engine Company. While the preliminary results look promising, this technology is not expected to be commercially available for an additional one or two years. Manufacturers of Emission Controls Association (MECA) is researching oxidation catalysts, particulate filters, and selective catalytic reduction (SCR) technologies. Oxidation catalysts can substantially reduce carbon monoxide (CO), particulate (PM), unburned hydrocarbons (HC), smoke, and odors. Particulate filters can reduce PM and smoke and SCR can simultaneously reduce NO_x, PM, and HC. Oxidation catalysts and particulate filters are currently available and can substantially

reduce CO, PM, HC, smoke, and odors, especially when used in combination with a particulate filter, but any NO_x reductions are incidental and result from retuning the engine, which will reduce NO_x, but increases the PM and CO which are then controlled by the catalyst and filter. SCR is the only technology that specifically reduces NO_x, but its effectiveness is currently only demonstrated on stationary engines. Problems with SCR technology are storage of the ammonia or urea reagent, the operating temperature range, and sensitivity to sulfur in the fuel. All of the catalyst technologies will benefit from lower sulfur diesel fuel. As sulfur is reduced from the current 500 ppm level to less than 30 ppm, the performance of the catalyst is significantly improved. Levels below 30 ppm will be required for the SCR systems to operate efficiently and will also improve the reliability of the oxidation catalyst and particulate filters. By the time that SCR and oxidation catalysts for construction equipment are available, there will probably be new generation engines available that will have lower emissions. However, there will still be a market for retrofit equipment, since the useful life of these engines is 20 to 30 years, if the cost is reasonable.

The Dallas Chapter of the AGC, Texas Industry Project, Houston Construction Industry Coalition, HBA, and Waste Management commented that an alternative to the restriction in hours of operation would be to adopt a program similar to the Carl Moyer program implemented in California, which provides incentives for the early introduction/use of low-NO_x engines through purchase, repowering, or retrofitting.

The commission acknowledges the recommendation for a Carl Moyer-type of program to accelerate the development and introduction of emissions-reduction technology for construction equipment, but must rely on the Texas Legislature for approval and grant funding to further such a project.

Commission staff are preparing a briefing paper regarding issues, interim solutions, and a similar statewide pilot program which could be viable for not only the DFW area but other nonattainment and near-nonattainment areas within Texas. The exemption offered under §114.437(b) offers flexibility similar to the Carl Moyer program.

The following comments regarding landfills were made by City of Denton Councilman Mark Burroughs, TxSWANA, Silver Creek Materials Recycling & Compost, Waste Management, Watauga Texas, Trinity Waste Services, City of Grand Prairie, City of Arlington, Charter Waste, Inc., City of Weatherford, Texas Municipal League, City of Irving, National Solid Waste Management Association, City of Carrollton, City of Garland, City of Farmers Branch, City of Plano, NCTCOG, and the City of Dallas:

Equipment used at all solid waste operations, including landfills, transfer stations, material recovery facilities, and composting facilities, should be exempt.

The commission cannot exempt construction equipment used at landfills, because total emissions for operation from 6:00 a.m. to 10:00 a.m. for the 17 landfills in the four-county DFW area for the year 2007 exceed the de minimis NO_x level of 0.14 tons per day for the DFW area. Therefore, the contribution of NO_x from construction equipment used at landfills in the DFW area is considered significant enough to warrant regulating this equipment.

If landfill equipment is subject to the ban, the TNRCC would be flooded with permit amendments to extend operational hours, which would likely be impeded or delayed by public opposition to extended hours of

operation. Also, Silver Creek commented that operating requirements for composting facilities are dictated by regulation, rather than by individual permit, so regulations such as the requirement to immediately begin processing materials to prevent odors would need to be revised if heavy-duty diesel construction equipment were not permitted to operate between 6:00 to 10:00 a.m. during the summer months.

Although the proposed limitations on operation of construction equipment may be contrary to specific standards or provisions contained in certain Municipal Solid Waste (MSW) permits, the commission does not believe the standards are "directly opposite" of current MSW regulations. For example, 30 TAC §330.118, Hours of Operation, does not specify the hours during which a landfill must operate and instead indicates the operating hours are those "approved in the permit or site operating plan." The Chapter 330 rules do not specifically prohibit or require operation of a landfill during specific hours. The commission recognizes that operators of permitted MSW facilities may find that conditions have changed such that operating hours and procedures specified in the approved facility permit (including the Site Operating Plan) need to be revised. Changes to operating hours of less than one hour beyond the hours specified in the approved facility permit are considered non-substantive changes and are processed by the TNRCC MSW Permits Section as Class I permit modifications. Changes to operating hours of more than one hour beyond the hours specified in the approved facility permit are considered substantive changes and are processed by the MSW Permits Section as minor or major amendments, depending upon the length of extension requested. Changes to operating hours that extend the hours by more than one hour, but less than two hours are processed by the MSW Permits Section as minor permit amendments and changes of more than two hours are processed as major permit amendments. Changes to non-substantive permit terms and

procedures are processed by the TNRCC MSW Permits Section as Class I modifications under 30 TAC §305.70, Recordkeeping Class I Modifications, while changes to substantive terms are processed as a minor or major permit amendment under 30 TAC §305.62, Amendments. The commission believes that the TNRCC MSW Permits Section has adequate staff and resources to process amendment or modification requests (that would result from implementation of the proposed rules) within required processing time frames. Facilities that are contractually obligated to collect waste between 7:00 a.m. and 7:00 p.m may need to increase the number of collection vehicles to collect the same volume of waste in the compressed time period. The commission expects that these facilities will develop a method to comply with both their contracts and the equipment operating restrictions.

Landfill operations will be extended later into the night, causing noise disruption to residents and neighborhoods.

The commission recognizes that nighttime operations may cause noise disruptions to residents and neighborhoods. However, facilities can minimize these impacts through design and operational changes, including additional road and working face lighting, traffic control, segregation of commercial and private vehicle disposal areas, personnel to specify dumping locations, and other items, and by informing residents in advance of operational changes.

The time period of the shift is the heaviest period for refuse generation. Garbage will accumulate at the working face or tipping floor. Problems with litter control, odor, birds, rodents, vectors, and possibly the

spread of disease will result if waste that is picked up and delivered to the landfill is not able to be compacted or covered until after 10:00 a.m. Working the waste in the evening after winds die down will significantly increase the chance of odor plume formation.

Although waste may be accepted during the 6:00 to 10:00 a.m. period, the facilities will still be required to meet all permit and rule requirements including those in 30 TAC §330.115, Fire Protection; §330.117, Unloading of Waste; §330.129, Control of Windblown Waste; §330.125, Air Criteria; §330.126, Disease and Vector Control; §330.132, Compaction; §330.133, Landfill Cover; and §330.136, Disposal of Special Wastes. Acceptance of waste during the restricted hours must not result in violations of permit conditions or MSW rule requirements, or the facility may be subject to enforcement action. Facilities can minimize these impacts through design and operational changes, including additional road and working face lighting, traffic control, segregation of commercial and private vehicle disposal areas, and personnel to specify dumping locations.

Traffic through the landfill would be higher in a shorter period of time, resulting in increased safety hazards, especially during the high-volume summer months. If waste collection is delayed because collection vehicles are turned away from the landfills to prevent waste from accumulating, higher traffic in neighborhoods during the restricted hours, which coincide with after-school hours and rush hour, will present safety hazards. Solid waste placed at curbside will sit for longer periods, baking in the sun and creating odor, litter, and vector problems in residential neighborhoods.

The commission agrees that the extension of equipment operating hours and increased traffic may increase safety risks. However, facilities can minimize many of the risks by making design and operational changes and by informing the public of these changes. These changes could include additional road and working face lighting, traffic control, segregation of commercial and private vehicle disposal areas, personnel to specify dumping locations, and other items. The commission recognizes that collection activities may be delayed as the result of the proposed construction equipment operating limitations and that solid waste placed at curbside may sit for longer periods of time before collection. However, the commission disagrees that a collection delay will necessarily result in additional odor, litter, and vector problems as collection delays should be minimal. Also, the impact of the delayed construction can be minimized by informing residents of new collection schedules.

The inability to compact waste during the restricted time period will significantly decrease the density of waste in landfills and lead to much more rapid consumption of capacity. Lack of compaction also means less stable landfills, increasing settling, and therefore risk of cap and liner failure.

The commission disagrees that after dark landfill operation necessarily results in lower compaction rates and reduced available landfill capacities and believes that implementation of certain operational changes for "after dark" operations can result in similar daytime and "after dark" compaction densities. Many of the landfills within the DFW area currently conduct "after dark" operations and have made operational changes, such as the installation of working face lighting control, to help ensure that maximum compaction densities are achieved.

Costs would increase from having to purchase additional trucks and hire more people to manage wastes in the compressed time frame, operate lighting for nighttime operations, pay employees for nighttime work, and pay contractors who perform cell construction and closure after-hours.

The commission expects that affected facilities will develop strategies to secure the resources necessary to perform required functions to ensure that the facilities continue to operate according to permit conditions, while complying with the restriction on construction equipment use.

The ban on equipment use may result in increased disposal at unregulated facilities.

The commission expects that facilities will work with their waste collection staff to ensure that waste continues to be properly collected and disposed of according to regulations. Facilities could also minimize illegal disposal by educating the communities they serve on any operational and scheduling changes they may need to make to comply with this rule.

Spotters at landfills will be significantly impaired in their efforts to identify unacceptable waste without the use of spreading equipment, which is critical to their screening protocols.

The commission expects that facilities will develop alternative procedures to ensure the effective identification of unacceptable wastes. Facilities could re-educate their customers on what types of

wastes are unacceptable in order to minimize the amount of unacceptable waste being brought to landfills.

Silver Creek Materials Recycling & Compost commented that many of the problems identified in TxSWANA's comments will be even more serious at composting facilities, where the waste stream is almost exclusively putrescible and, thus, odor and vector control is an even more serious concern.

Although materials may be accepted for composting from 6:00 to 10:00 a.m., facilities will still be required to meet all permit/registration and rule requirements including those in 30 TAC Chapter 332. Acceptance of materials for composting during the restricted time period must not result in violation of permit/registration conditions or 30 TAC Chapter 332 requirements or the facility may be subject to enforcement action. Recycling and composting operations may need to delay waste acceptance until after 10:00 a.m. in order to meet permit/registration and regulatory requirements. Also, the commission expects that facilities can minimize many of the risks by making design and operational changes.

Trinity Waste Services commented that as an alternative the TNRCC should consider modifications to 30 TAC §330.32 to require waste collection only once per week in the 12-county DFW area, reducing the number of collection trucks on the road, and therefore, improving air quality.

The commission disagrees that a rule change that essentially prohibits a more frequent than once-per-week collection schedule would be appropriate. The purpose of 30 TAC §330.32(a) is to ensure that

municipal sold waste containing putrescible wastes is collected a minimum of once weekly to prevent propagation and attraction of vectors and the creation of public health nuisances, but that more frequent collection may be necessary in some instances to minimize these problems.

The City of Weatherford commented that the shift could adversely impact cities' ability to respond to emergencies.

The commission disagrees with this comment. The rule contains an exemption under §114.437(1), which allows for the operation of any construction equipment used exclusively for safety purposes and emergency operations. Section §114.437(1) has been reworded to more clearly reflect that exemption from the restricted hours of operation is for equipment used to protect public health and safety or the environment.

North Texas Bridge Co., Inc. commented that the shift violates the Bill of Rights.

The commission disagrees with this comment. The rule does not require operators or their employees to remain at job sites beyond normal working hours, it simply prohibits certain heavy equipment operations early in the day.

The TNRCC has failed to comply with its statutory obligations in failing to perform a complete Fiscal Note, Regulatory Impact Analysis (RIA), Takings Impact Analysis (TIA), and Cost/Benefit Analysis. These comments were made by TPPF, AGC of Texas, the Dallas and Fort Worth Chapters of AGC,

Associated Builders and Contractors, Inc., Waste Management, City of Carrollton, Texas Aggregates & Concrete Association, APAC-Texas, Houston Construction Industry Coalition, the Texas Industry Project, ARTBA, Representative Tommy Merritt, Exxon Mobil Chemical Company, Thompson & Knight, and Meridian Aggregates Company.

TxSWANA commented that in order to comply with these obligations, TNRCC must more thoroughly identify all the environmental, health, and economic effects of applying the proposed rule to solid waste facilities and describe, in detail, how those costs are outweighed by any benefits of such a rule. In the preamble to the proposed rule, TNRCC concedes that the proposal is a "Major Environmental Rule," but argues that none of the applicability requirements in Texas Government Code, §2001.0225(a) are met. TxSWANA submits that, on the contrary, all of the applicability requirements are met even though only one is necessary to trigger the RIA requirement. In the language of §2001.0225, the proposed rule exceeds state and federal law, is not mandated by any specific provision of state or federal law, and is proposed solely under general powers of the agency. Regardless of general directives and mandates to attain NAAQS, TNRCC is not excused from the RIA requirements when it proposes specific control strategies projected to help meet those directives and mandates. In fact, the RIA process was specifically designed to require a careful cost/benefit analysis and weighing of options whenever an agency must pick and choose from a group of possible strategies to meet a more generalized goal. TxSWANA urged the TNRCC to give close scrutiny to the Senate Natural Resources Committee Interim Report that led to the RIA legislation. That legislative history makes it clear that the RIA requirement was intended for rules like the proposed operating hours ban. To say that one of hundreds of proposed control strategies aimed at meeting a federal mandate is excused from the RIA requirement would eviscerate the very purposes for which that statute

was passed - to ensure careful and deliberate weighing of options after specifically identifying and quantifying relative costs and benefits.

TxSWANA continued to comment that a separate and independent basis for applying RIA requirements to a rulemaking exists where a rule is adopted under the general powers of the agency, such as those set forth in the preamble to the proposed rules. The commenter also stated that the TNRCC has failed to explain or support its statement that the laws cited and summarized in the preamble specifically require the adoption of these rules. The fact that multiple Code provisions arguably confer broad authority upon the TNRCC to adopt various rules cannot excuse the agency from its legal duty to identify specific statutory mandates to adopt the rule in question.

The commission disagrees that an RIA is required for this rule. Although the commission has determined that this is a major environmental rule because it may adversely impact in a material way a sector of the economy, the commission is not required to perform a regulatory impact analysis because the rule does not meet any of the criteria listed in Texas Government Code, §2001.0225(a). The rule does not exceed a standard set by federal law or state law. The standard in this case is the NAAQS for ozone. The state is required to demonstrate compliance with this standard under federal law, 42 USC, §7410, and under state law, Texas Health and Safety Code, §382.012 and §382.039. As shown in the modeling for the SIP that is associated with this control strategy, the state is requiring no more emission reductions than absolutely required to meet the standard. Additionally, this rule would not exceed a requirement of a delegation agreement or contract with the federal government because none exists on this topic. And finally, this rule has not been proposed under the general

powers of the agency but instead has been proposed under the specific state laws found in Texas Health and Safety Code, §§382.011, 382.012, 382.017, 382.019, and 392.039. For these reasons, an RIA is not required for this rule. Because a full cost-benefit analysis (CBA) is only required as part of a full regulatory impact analysis, a full CBA was also not required.

Section 7410 of the FCAA requires states to adopt a SIP which provides for "implementation, maintenance, and enforcement" of the primary NAAQS in each air quality control region of the state. While §7410 does not require specific programs, methods or reductions in order to meet the standard, state SIP's must include "enforceable emission limitations and other control measures, means or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance as may be necessary or appropriate to meet the applicable requirements of this chapter," (meaning Chapter 85, Air Pollution Prevention and Control). It's true that the FCAA does require some specific measures for SIP purposes, like the inspection and maintenance program, but those programs are the exception, not the rule, in the SIP structure of the FCAA. The provisions of the FCAA recognize that states are in the best position to determine what programs and controls are necessary or appropriate in order to meet the NAAQS. This flexibility allows states, affected industry, and the public, to collaborate on the best methods for attaining the national ambient air quality standards for the specific regions in the state. Even though the FCAA allows states to develop their own programs, this flexibility does not relieve a state from developing a program that meets the requirements of §7410. Thus, while specific measures are not generally required, the emission reductions are required. States are not free to ignore the requirements of §7410 and must develop programs to assure that the nonattainment areas

of the state will be brought into attainment on schedule. Therefore, adopting the SIP rules are specifically required by federal law.

Additionally, the legislative history contradicts the conclusion of the commenters that a full RIA is required of these rules. The requirement to provide a fiscal analysis of proposed regulations in the Texas Government Code were amended by Senate Bill 633 (SB 633) during the 75th Legislative Session. The intent of SB 633 was to require agencies to conduct a RIA of extraordinary rules. These are identified in the statutory language as major environmental rules that will have a material adverse impact and will exceed a requirement of state or federal law, a delegated federal program or is adopted solely under the general powers of the agency. With the understanding that this requirement would seldom apply, the commission provided a cost estimate for SB 633 that concluded "based on an assessment of rules adopted by the agency in the past, it is not anticipated that the bill will have significant fiscal implications for the agency due to its limited application." The commission also noted that the number of rules that would require assessment under the provisions of the bill was not large. This conclusion was based, in part, on the criteria set forth in the bill that exempted proposed rules from the full analysis unless the rule was a major environmental rule that exceeds a federal law. As discussed above, the FCAA does not require specific programs, methods or reductions in order to meet the NAAQS, thus, states must develop programs for each nonattainment area to ensure that area will meet the attainment deadlines. Because of the ongoing need to address nonattainment issues, the commission routinely adopts rules for inclusion into the SIP. The legislature is presumed to understand this federal scheme. If each rule proposed for inclusion in the SIP was considered to be a major environmental rule that exceeds federal law, then every SIP rule

would require the full RIA contemplated by SB 633. This conclusion is inconsistent with the conclusions reached by the commission in its cost estimate and by the Legislative Budget Board (LBB) in its fiscal notes. Since the legislature is presumed to understand the fiscal impacts of the bills it passes, and that presumption is based on information provided by state agencies and the LBB, the commission believes that the intent of SB 633 was to only require the full RIA for rules that are extraordinary in nature. While the SIP rules will have a broad impact, that impact is no greater than is necessary or appropriate to meet the requirements of the FCAA. For these reasons, SIP rules fall under the exception in Texas Government Code, §2001.0225(a), because they are specifically required by federal law.

Regarding the TIA, TxSWANA commented that the TNRCC claims that adopting the proposal is "an action reasonably taken to fulfill an obligation mandated by federal law" in justifying its failure to perform a TIA. Federal law mandates attainment with the NAAQS, but cannot be said to specifically mandate any one control strategy. TxSWANA believes that the Legislature intended the TIA to be prepared in situations such as this, where a choice is being made among several options projected to fulfill a federal mandate. At a minimum, to establish that a TIA is not required, TxSWANA believes the TNRCC is required to specifically describe why each control strategy is "reasonably taken" to fulfill the attainment mandate.

The commission disagrees with this comment. The proposal preamble stated clearly the commission's position that "Promulgation and enforcement of the proposed rules will not burden private, real property as it only regulates mobile sources, and will not cause a takings to occur."

Neither the rule as proposed, nor any changes made to the rule, burden private real property; thus, the provisions of Chapter 2007 of the Government Code which require the commission to perform a TIA do not apply.

Houston Construction Industry Coalition, TPPF, and AGC of Texas commented that the proposed rule exceeds TNRCC's statutory authority. Texas Clean Air Act, §382.019 only allows regulation of engines/transmissions used to propel land vehicles. Several types of equipment proposed for coverage by this regulation do not use engines/transmissions to move or propel themselves in the conventional way.

The commission disagrees with the commenters' interpretation of Texas Health and Safety Code, §382.019(a), and instead believes that the provision was meant only to grant the commission the authority to regulate these engines. The granting of authority does not implicitly preclude the agency from regulating other engine emissions. Texas Health and Safety Code, §382.012 and §382.039 give the commission broad authority to develop plans to control the air of the state, including controls on mobile sources, to demonstrate attainment of the NAAQS. Given this reasoning the commission believes that Texas Health and Safety Code, §382.019(a) provides authority for the adoption of this rule.

Two individuals commented that the wet concrete industry should not have been exempted from regulation, and Wise County should have been included in the area covered by this regulation because a high percentage of aggregates produced and sold in North Texas originate from Wise County.

The commission disagrees with this comment. The equipment used in the processing of wet concrete was exempted because of the temperature sensitivity of their operations during the effective time period of this rule. In addition, the emissions from the equipment used in this particular industry sector constitute a very minor contribution to the total emissions from construction equipment. Therefore, allowing this particular industry to operate their equipment during the restricted hours will not significantly impact peak ozone levels.

Wise county was not included in the area covered by this rule because it is not in the DFW CMSA, and is therefore not considered to significantly contribute to ozone levels.

One individual and TPPF commented that shifting highway construction to nighttime hours and traffic congestion resulting from the completion of fewer roadway projects will result in increased traffic congestion, which will reduce the benefits anticipated to be gained under the Mobility 2020 regional transportation plan.

The commission disagrees with this comment. It is already common practice to perform high-volume highway construction during off-peak travel hours such as nighttime and weekends. Morning peak travel hours in DFW are from 6:00 a.m. to 9:00 a.m. and afternoon peak travel hours are from 3:00 p.m. to 7:00 p.m. (these are the peak travel hours modeled in the Mobility 2020 plan). Since highway construction typically occurs during off-peak periods, when traffic is lighter, there should be no increase in traffic congestion. The emissions benefits shown in the Mobility 2020 plan result from improvements to the transportation system (reflect vehicle emissions after completion of construction

or implementation of improvements). Emissions associated with construction-related traffic congestion are not directly addressed by the Mobility 2020 plan. The commission expects that entities performing highway construction will modify their schedules to minimize any project delays that may be caused by the implementation of this rule, while at the same time complying with the rule. The impacts on the continuation of highway construction and associated traffic congestion would be much more severe if the DFW area fails to attain the NAAQS for ozone, which this rule is essential to achieve, and is denied federal highway funds.

A clarification in the rule of the term "Construction equipment" is needed (i.e., the rule inaccurately implies that it applies to all persons/manufacturing operations. The phrase "for the purpose of construction" needs to be added to 30 TAC §114.432 to make this clarification.). The addition of exemptions to clarify impacted and non-impacted activities/equipment would be helpful (i.e., exempting equipment used in manufacturing, production, shipping, receiving, routine maintenance and/or construction activities at a manufacturing facility, or a general exemption for "any equipment owned, leased, or operated by manufacturing facilities). These comments were made by NCTCOG, City of Dallas, Thompson & Knight, TCC, and TXI.

TXI commented that the proposal and its summaries were misleading and ambiguous regarding the scope of equipment types covered. TXI expressed concern that readers of the rule proposal would not realize that it applies to all off-road non-agricultural heavy-duty diesel engines greater than 50 hp rather than just construction and mining equipment; therefore, many affected entities may not have commented because they were unaware of the TNRCC's intent as to the applicability of the rule.

In response to these comments indicating that the rule was unclear in that it did not clearly state what types of equipment and/or operations the rule applied to, the commission has provided in the rule adoption preamble a list of equipment covered by this rule, and clarified that the rule applies to all operators of non-road heavy-duty diesel construction equipment rated at 50 hp and above, with the exception of agricultural users, regardless of how the equipment is being used. For example, equipment such as bulldozers used in sanitary landfills, non-road cranes used in demolition, and rubber tire loaders used in manufacturing operations are restricted by these rules. The commission cannot exempt construction equipment used by any industrial sectors other than wet concrete and agriculture, because emissions from this equipment represent a significant contribution to the DFW area's ozone levels. The regulation of this equipment is an essential component in the DFW area's strategy to attain federal air quality standards for ozone.

Thompson & Knight commented that the TNRCC failed to consider the impacts of the shift on manufacturing operations which operate 24-hours-per-day, seven days per week.

The commission anticipates that facilities which operate continuously will modify their procedures to enable them to comply with the rule while minimizing any potential disruptions in operations and production. Also, facilities that meet the exemption offered in §114.437(b) would be permitted to continue to operate during the restricted hours.

TXI commented that aggregate terminal operations should be exempted along with wet concrete operations, or an increase in emissions could result. Aggregate terminals depend heavily on diesel-powered backhoes

for direct unloading of aggregate from rail cars to trucks. If aggregate terminals are closed from 6:00 to 10:00 a.m., trucks that normally haul from the terminal locations to the ready mix concrete operations would be forced to haul directly from the outlying aggregate plants. This means that an additional 200 trucks would be required just to keep pace with the current wet concrete needs of the DFW area. NO_x emissions from these additional trucks would exceed 13 tons per day, or three times the amount of NO_x emitted when compared to utilizing aggregate terminals.

The commission disagrees with this comment. The commission anticipates that aggregate terminals and haulers can work together to develop schedules to enable haulers to deliver aggregate from the terminals to the concrete batch plants when it is needed, such as loading the hauling trucks the evening prior to the morning on which deliveries will be made, while complying with the operating restriction. Also, facilities that meet the exemption offered in §114.437(b) would be permitted to continue to operate during the restricted hours. Trucks used to haul aggregate are considered on-road mobile sources, and are, therefore, not subject to this rule, which applies strictly to *non-road* construction equipment. Therefore, no operating restrictions exist for trucks used to haul aggregate from the terminals to the batch plants.

Capitol Cement commented that cement plants would be forced to halt watering and street sweeping during the restricted hours, which are necessary for dust control, if they are restricted from using the watering and sweeping trucks.

The commission disagrees with this comment. Cement plant permits allow facilities the flexibility to choose the dust suppression method that can most appropriately and feasibly meet the requirements for that facility. Therefore, facilities that use equipment that is affected by the rule for dust suppression would have the option of using an alternate method of dust control, such as a sprinkler system, or using other equipment not covered by the rule to perform this function. Also, facilities that meet the exemption offered in §114.437(b) would be permitted to continue to operate during the restricted hours.

TxDOT suggested adding a grandfathered provision exempting projects contracted before the rule implementation date.

The commission has changed the effective date of this rule from June 1, 2001 to June 1, 2005. This extension will afford the commission additional time and opportunity to further study and refine the existing emissions inventory and modeling to determine the feasibility of implementing measures which will provide operators additional flexibility in complying with the rule. The delay in implementation will also allow manufacturers to accelerate their research and development of cleaner fuel and engine technology, which will afford more companies the opportunity to claim the exemption offered under §114.437(b) when the rule becomes effective.

The Texas Aggregates & Concrete Association and Meridian Aggregates Company commented that imposing the shift on the aggregate industry negates the exemption for the wet concrete industry, as

concrete work can't begin until the aggregate is delivered, which would be after 10:00 a.m. during the shift period.

The commission disagrees with this comment. The commission anticipates that the aggregate industry will work with their customers to develop schedules to enable haulers to deliver aggregate when it is needed by the wet concrete industry, such as loading the hauling trucks the evening prior to the morning on which deliveries will be made, while complying with the operating restriction. Trucks used to haul aggregate are considered on-road mobile sources, and are, therefore, not subject to this rule, which applies strictly to *non-road* construction equipment. Therefore, no operating restrictions exist for trucks used to haul aggregate from the terminals to the batch plants. Also, operators who meet the exemption offered in §114.437(b) would be permitted to continue to operate during the restricted hours.

The shift will prevent timely equipment maintenance, routine manufacturing unit outages, and turnaround activities at manufacturing facilities, preventing safe and efficient plant operations, which will decrease productivity. This comment was made by Houston Construction Industry Coalition, the Texas Industry Project, Exxon Mobil Chemical Company, TCC, and Dow Chemical Company. TCC commented that heavy equipment is often needed immediately to keep units on-stream, such as hydro blasting equipment needed to clean plugged lines, and that there is no alternative to delay this type of work and keep the operating units on-line.

The commission disagrees with these comments. Facilities can shift their schedules for routine maintenance and outages to accommodate the restriction on equipment operation during the morning hours. Also, facilities that meet the exemption offered in §114.437(b) would be permitted to continue to operate during the restricted hours. The commission recognizes that affected equipment may be needed to perform emergency maintenance during the restricted hours to protect the health and safety of employees. Construction equipment used for these purposes is exempt under §114.437(a)(1).

TCC also commented that many plants use maintenance craftsmen whose schedules are dictated by union contracts. Some plants could lose half of their maintenance day since workers could not begin maintenance until equipment is physically removed by the operating equipment.

The commission anticipates that affected facilities will conduct contract negotiations with the unions to enable union maintenance workers to complete the necessary maintenance work on a schedule that would also allow the facilities to comply with the equipment operating restriction and maintain operations. The commission anticipates that the unions will work with the affected facilities to resolve any scheduling issues and come to a mutually-agreeable arrangement. Also, facilities that meet the exemption offered in §114.437(b) would be permitted to continue to operate during the restricted hours, eliminating any need to modify union contracts.

Brown McCarroll & Oaks Hartline, L.L.P. suggested extending the scrappage program to any mobile source for which adequate documentation of emission reductions can be documented, not just on-road sources.

The commission disagrees with this suggestion. A mechanism for quantifying emission reductions from the scrappage of construction equipment has not been developed. To be able to receive credit for any emissions reductions for SIP attainment, the reductions must be quantifiable and enforceable. Therefore, a program by which emissions reductions from "scrapping" old construction equipment are used to offset ozone reductions gained by fully implementing this rule is not possible at this time. The Voluntary Accelerated Vehicle Retirement (VAVR), or "scrappage" rule included in the DFW SIP only applies to on-road motor vehicles, including passenger cars and light-duty trucks. The criteria provided in the VAVR rule helps ensure that emission reductions associated with VAVR programs qualify for SIP credit in meeting the area's attainment demonstration. The VAVR rule will use modeled averages from EPA's MOBILE model to calculate emission reductions per vehicle "scrapped," or each participating vehicle can be tested using an emissions analyzer that is capable of determining vehicle emissions in grams per mile. Also, the commission has changed the effective date for the construction equipment rule from June 1, 2001 to June 1, 2005. This extension will afford the commission additional time and opportunity to further study and refine the existing emissions inventory and modeling to determine the feasibility of implementing measures such as a scrappage program for construction equipment to provide operators additional flexibility in complying with the rule. The delay in implementation will also allow manufacturers to accelerate their research and

development of cleaner fuel and engine technology, which will afford more companies the opportunity to claim the exemption offered under §114.437(b) when the rule becomes effective.

The Texas Aggregates & Concrete Association and Meridian Aggregates Company commented that businesses outside of the shift area, especially aggregate operations, will have an unfair competitive advantage over those in the area impacted by the shift.

The commission disagrees with this comment. Businesses in the affected counties that meet the exemption offered in §114.437(b) would be permitted to continue to operate during the restricted hours, and maintain the competitive advantage they currently possess over outlying businesses. For those businesses that are either unable or choose not to meet the exemption, the commission anticipates that these businesses will develop creative solutions to maintain their businesses' competitive status.

Thompson & Knight, L.L.P., suggested creating a "de minimis" exemption for operators with ten or fewer pieces of equipment on one contiguous parcel of land.

The commission is not able to offer a de minimis exemption based the number of pieces of equipment (fleet size) at this time, because no information was received with the comments on "typical" fleet sizes for the affected industries; therefore, the commission has no mechanism to determine what the de minimis threshold for fleet size would be, or the universe of industries that such an exemption would affect. Also, a de minimis level for number of pieces of equipment would be difficult to

determine, because the level would be dependent on several factors, including type of equipment used, and length of time each piece of equipment is used. These factors would have to be considered because of the varying emissions for each variable. It is for these reasons that the commission cannot offer a de minimis exemption based on fleet size at this time. Operators of small fleets, in addition to all other operators of construction equipment affected by this rule, will have the option of claiming the exemption offered in §114.437(b), which would allow them to continue to operate if they submit an emissions reduction plan to the commission by May 31, 2002, that is approved by the executive director and the EPA by May 31, 2003. The plan must describe in detail how the operators will modify their behavior or fleet of equipment to reduce NO_x emissions by June 1, 2005 by an amount equivalent to the total NO_x reductions achieved by implementation of this rule and the Accelerated Purchase of Non-road Heavy-duty Diesel Equipment rule. In order to be approved, the plan must demonstrate reductions of NO_x equivalent to those required by both §114.412 (Accelerated Purchase rule) and §114.432, and must contain adequate enforcement provisions. This exemption would offer operators of small fleets the flexibility to comply with the rule that a de minimis exemption would offer.

STATUTORY AUTHORITY

The new sections are adopted under the Texas Water Code (TWC), §5.103, which provides the commission with the authority to adopt rules necessary to carry out its powers and duties under the TWC. The amendments are also adopted under the Texas Health and Safety Code, TCAA, §382.011, which provides the commission with the authority to control the quality of the state's air; §382.012, which provides the commission the authority to prepare and develop a general, comprehensive plan for the control

of the state's air; §382.017, which provides the commission the authority to adopt rules consistent with the policy and purposes of the TCAA; §382.019, which provides the commission the authority to adopt rules to control and reduce emissions from engines used to propel land vehicles; and §382.039, which provides the commission the authority to develop and implement transportation programs and other measures necessary to demonstrate attainment and protect the public from exposure to hazardous air contaminants from motor vehicles.

SUBCHAPTER I: NON-ROAD ENGINES

DIVISION 4: CONSTRUCTION EQUIPMENT OPERATING RESTRICTIONS

§§114.432, 114.436, 114.437, 114.439

§114.432. Control Requirements.

No person shall start or operate any non-road diesel construction equipment, of 50-horsepower and above, between the hours of 6:00 a.m. to 10:00 a.m., during the time period between June 1 through October 31, in the counties listed in §114.439 of this title (relating to Affected Counties and Compliance Dates).

§114.436. Recordkeeping Requirements.

(a) Any person that operates construction equipment described in §114.432 of this title (relating to Control Requirements) in those counties listed in §114.439 of this title (relating to Affected Counties and Compliance Dates) is subject to requirements of this section.

(b) Such person described in §114.436(a) above shall provide to the executive director, or other air pollution program with jurisdiction, any records required to be maintained in accordance with this section within five days of a written request from the executive director, or other air pollution program with jurisdiction.

(c) Such person described in §114.436(a) above shall maintain daily operating records on the job site. These records must be maintained for a minimum of two years. The records at a minimum must contain:

(1) date(s) of operation;

(2) start and end times of daily operation;

(3) types of equipment being used; and

(4) name(s) of the equipment operator(s).

§114.437. Exemptions.

(a) The following uses of construction equipment are exempt from §114.432 and §114.436 of this title (relating to Control Requirements; and Recordkeeping Requirements) in the counties listed in §114.439 of this title (relating to Affected Counties and Compliance Dates):

(1) equipment used exclusively for emergency operations to protect public health and safety or the environment; and

(2) equipment used for mixing, transporting, pouring, or processing of wet concrete provided such equipment is actually processing wet concrete.

(b) Operators that submit an emissions reduction plan by May 31, 2002 (that is approved by the executive director and the EPA by May 31, 2003) will be exempt upon implementation of the rule in 2005, and will be permitted to operate during the restricted hours. In order to be approved, the plan must demonstrate reductions of oxides of nitrogen equivalent to those required by both §114.412 of this title (relating to Control Requirements) and §114.432 of this title, and must contain adequate enforcement provisions.

§114.439. Affected Counties and Compliance Dates.

Effective June 1, 2005, affected persons in the following counties shall be in compliance with §§114.432, 114.436, and 114.437 of this title (relating to Control Requirements; Recordkeeping Requirements; and Exemptions). These include Collin, Dallas, Denton, and Tarrant Counties in the Dallas/Fort Worth ozone nonattainment area.