

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Rule 2202 - On-Road Motor Vehicle Mitigation Options

**Employee Commute Reduction Program
AVR Survey Support Guide**

July 29, 2005

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I. Introduction

Rule 2202 and the Employee Commute Reduction Program (ECRP) Guidelines were amended on February 6, 2004 to include additional program alternatives that help employers achieve their average vehicle ridership (AVR) performance target. As a result, program alternatives and guideline amendments may have methodologies unfamiliar to many employers.

This Support Guide will provide answers to frequently asked questions about the AVR survey and illustrates how to use the AVR adjustments for ECRP submittals only. Although this guide may not answer all of your questions, it is our intent to periodically update the information as issues arise. As always, staff is available to answer questions and resolve issues not discussed in this document. You may contact staff by calling the Transportation Programs hotline at (909) 396-3271. All Rule 2202 compliance forms and additional support information can be found on the AQMD Transportation Programs web site at www.aqmd.gov/trans/.

Special Notes:

- It is the employers' responsibility to read and understand Rule 2202 and the Guidelines before implementing any program.
- This Support Guide will most benefit readers having some familiarity with the ECRP compliance options and related terminology.
- The Support Guide **is not** intended to be a substitute for the AQMD Governing Board adopted rules or Guidelines. The information contained in this document does not override the adopted rule or Guidelines.

II. Frequently Asked Questions

1. *What type of programs should be filed under the ECRP compliance option?*

Effective June 7, 2004, employers are required to submit an Annual Program on their assigned annual due date.

2. *Are ECRP submittals subject to full review annually rather than every 3 years?*

Yes. ECRP submittals will now be evaluated every year to determine if the employer is making progress toward AVR performance goal attainment.

3. *Can ECRP submittals be disapproved if the AVR decreases, or does not improve from a previously submitted Annual Program?*

Yes. Employers must demonstrate a *good faith effort* toward achieving the required AVR performance goal. If an AVR decreases, or does not improve from the previously submitted Annual Program, the employer may be required to do any of the following to receive program approval:

- modify the selection of strategies; and/or
- increase the number of strategies; or
- submit an ECRP/Emissions Offset; or
- submit an AQIP; or
- submit an ERS program.

4. *The Guidelines require that employers keep records, including AVR surveys, for three years. This could end up being a lot of paper. Is it acceptable to scan the completed surveys and keep them on a computer hard drive or compact disc?*

Yes, you can maintain your AVR surveys this way. However, you must scan the entire survey form and include the signature block or employee identifier. The entire scanned form must be readable when viewed on-line or printed. Remember, the scanned records are still subject to the same recordkeeping requirements as any other ECRP document or record.

5. *Why can't hybrid vehicles be counted the same as electric vehicles or qualify for some AVR credit?*

A hybrid vehicle is a vehicle that is powered using both electric and gasoline-powered motors. Emissions from hybrid electric motor vehicles may also have substantially lower emissions than conventionally powered motor vehicles. However, because they are fueled by gasoline, instead of an alternative fuel, they do not qualify to receive AVR credit at this time. Qualifying vehicles must be 100% electric (i.e., ZEV - zero emission vehicles). While the hybrid vehicles currently offered in California are very clean vehicles, they fall short of electric vehicles and alternative fuel vehicles in several key areas. ZEVs offer significant reductions over hybrids and these emission rates improve over time due to the fact that hybrids produce more emissions as they age. Hybrids can not be considered true zero-emission vehicles because of their internal combustion engines. Therefore, only ZEVs qualify for AVR credit at this time.

6. *Why isn't my motorcycle counted as a carpool, since it can use the carpool lanes and uses less fuel than a passenger vehicle?*

Motorcycles are permitted by federal law to use HOV lanes, even though they typically carry only one passenger. Allowing motorcycles to use HOV lanes keeps them moving, and it is considered safer to keep two-wheel vehicles moving rather than have them traveling in start-and-stop traffic conditions. Federal law allows individual states to override this provision, if they determine that there is an inherent safety risk by allowing motorcycles to use HOV lanes. Initially, the State of California did not allow motorcycles in HOV lanes; however, subsequent state legislation was passed in 1998 in the State of California that permits motorcycles to use HOV lanes.

While most motorcycles may use less fuel, they actually produce more air pollution than many passenger vehicles. The California Air Resources Board (CARB) reports that motorcycles produce up to 15 times the emissions per mile as the average new car or light-duty truck. CARB has enacted a two-tier emission standard that is to be met by motorcycle manufacturers in 2004 and 2008. The EPA reports that motorcycles produce more harmful emissions per mile than driving a car or even a large sport utility vehicle

(SUV) and adopted, in December 2003, national standards for motorcycle exhaust emissions.

Simply put, motorcycles are allowed to use HOV lanes for safety reasons, not because they are less polluting.

7. *My company wants to submit an ECRP/Offset using the AQIP option. I notice that we can only participate in the AQIP at the annual rate of \$60 per employee only. Why is that?*

Because ECRP programs are required to be submitted on an annual basis, employers can only use the AQIP offset at the annual rate.

8. *How do employers complete the compliance forms to determine the AQIP payment amount using the ECRP Offset?*

The compliance forms document includes the *Employee Commute Reduction Program Offset Option* registration form, which an employer must complete in order to comply with this option. This registration form is designed to assist the employer in calculating their ECRP offset cost.

9. *What is the purpose of adding the NSE (number of surveys with errors) line to the AVR summary?*

The purpose of adding the NSE line is to provide a useful tool to help employers identify survey errors, and, if appropriate, to correct the errors. In the past, this number as well as the number of unreturned surveys, were listed on the NSR (no survey response) line, causing some confusion for ETCs. The addition of the NSE line clearly delineates which surveys have errors and which were simply not returned.

The use of the NSE line is optional and it is acceptable to continue to use only the NSR line. For a more detailed response, see the NSE discussion in *III, Number of Surveys with Errors*, of this document.

10. *If a survey is filled out completely but is not signed, or does not have an employee identifier; is that counted as a 5 day drive alone?*

No. The survey must be counted as NSR (no survey response) unless it can otherwise be linked to an individual employee.

11. *What is the difference between “Non-Commute” and “Other Days Off” on the AVR survey summary form?*

Non-Commute is used when an employee is either outside of the AQMD jurisdiction for a full 24 hours conducting business (e.g., airline employees) or arrives at the worksite during the window for calculating AVR and remains at the worksite (stays overnight) to complete work assignments (e.g., hospital employees, firefighters, or police officers).

Other Days Off is used when an employee worked at least one day during the peak window of the survey week but did not report to the worksite on one or more additional days.

For example:

- An employee begins work on Monday and Tuesday in the peak window, then reported for jury duty Wednesday through Friday. Wednesday, Thursday, and Friday are marked on their survey under *Other Days Off* on line CC.

Examples of *Other Days Off* may include: jury duty, military duty, extended medical leave, maternity leave, bereavement leave, employees not scheduled to work that day, or administrative leave.

Off-Peak is used when an employee has begun work at least one day in the peak window and begins work outside of the peak window on the other days. The *Off-Peak* must be used when an employer is taking credit for the off-peak AVR adjustments.

For example:

- An employee begins work on Monday and Tuesday in the peak window, but because of work schedules, begins work outside of the peak window on Wednesday through Friday. The employer would mark Wednesday, Thursday, and Friday on the Weekly Employee Survey Summary Form as *Off-Peak*.

Employees must mark on their surveys what they actually did during the survey week by recording the commute mode, actual start time at the worksite, or non-commute modes (i.e., vacation, sick, other, telecommuting, non-commuting, etc.).

It is the ETC's responsibility to summarize and report the survey information correctly and in conformance with the ECRP Guidelines.

12. How should employees mark their surveys when they report to another location for business-related purposes (meetings, seminars, training, etc.) during the peak commute period?

Employees reporting to other locations, within the AQMD boundaries, must mark their survey as if they had reported to their assigned worksite (i.e., marking their survey with the actual time they began work and commute mode).

For example:

- An employee drove alone to another location for a meeting. The meeting began at 8 a.m. The employee would mark the survey reporting the *work start time* as 8 a.m. and the *commute mode* as drive alone.

13. How should employees mark their surveys so that peak and off-peak credits can be taken?

Employees must mark their surveys to show their actual commute modes for the survey week and provide the actual time they began work for each day.

The ETC would then summarize the survey data to identify for the different peak and off-peak start times and commute modes in order to calculate the worksite AVR.

For example:

- An employer has established the survey week as Monday through Friday, 6 a.m. – 10 a.m. If an employee was in a two person carpool and began work at 3 p.m. on Friday, he would mark the survey accordingly. When the employer tabulates the peak window data, the Friday commute is counted as *Off-peak* on the Peak Survey Summary Form. The employee's Friday commute could also be tabulated on the

Off-Peak Survey Summary Form as a two person carpool. Further examples may be found in section V. *Counting Employees in Peak and Off-Peak Window* in this document.

14. *How should student workers mark their surveys when they have morning classes and start work later the same day?*

Student workers would mark their survey with the time they actually began work and not the time they arrive on campus to attend classes.

15. *Can an employer get AVR credit for other businesses whose employees rideshare and work at their worksite?*

Yes. Employers may include employees of other businesses located at the worksite. Temporary employees and contractors are subject to the same survey requirements, as described in section II.D., *Aggregating AVR for Multi-Site Employers*, of the ECRP Guidelines. These employees must be surveyed with the same survey form and during the same survey period as the primary employer.

Employers must verify that temporary employees, contractors, or the employees of other businesses are not included in another Rule 2202 program or ECRP AVR calculation before including them in their survey.

16. *Can off-peak employees, temporary employees, or contractors at a non-regulated worksite be included as part of the voluntary inclusion of non-regulated worksites?*

Yes, they may be included. All AVR survey requirements and calculations are the same for regulated and non-regulated worksites.

17. *When including temporary employees or contractors, is a 60% survey response required?*

Yes, a minimum 60% response is required. The ECRP survey results of any worksite must have a minimum 60% survey response rate to be acceptable as described in the ECRP Guidelines.

18. *What is the minimum required survey response rate for the off-peak AVR adjustment?*

To receive the off-peak adjustment you must survey all off-peak employees during the established survey week and have a minimum 60% response rate. The off-peak survey is subject to the same AVR requirements as the peak survey as described in the ECRP Guidelines.

19. *Can the peak and off-peak surveys be conducted at a worksite during different weeks?*

No. All of the employees at each worksite must be surveyed during the same established survey week.

The peak and off-peak surveys must: be representative of employee commutes during a typical work week at the worksite; use the same consecutive five days when the majority of the employees are scheduled to report to work; not be more than 6 months old; and, follow the requirements described in the ECRP Guidelines.

20. *My worksite is a seven-day-a-week operation with different working shifts. I conduct seven day employee surveys and want to take advantage of the off-peak rideshare activities. The majority of my peak window employees report to work Monday through Friday, but the majority of the off-peak employees report Tuesday through Saturday. Can I use different off-peak days for the AVR adjustments?*

No. The off-peak days used for the AVR adjustments must be the same five consecutive days the peak window employees are surveyed.

21. *Can the surveys of different worksites be conducted at different times of the year?*

Yes, as long as the survey for each worksite is no more than six months old at the time of the worksite's program submittal.

22. *To receive the Reduced Staffing credit, how do I count employees who are on sabbatical or other long-term leaves?*

You are required to send surveys to all employees who began work in the peak window during the established AVR survey period. Since these employees are not reporting to work during the survey period they will not be included. When you survey during the *Reduced Staffing* time period, you only need to account for the surveys that you send to your employees.

23. *Can I use more than one AVR adjustment or am I limited to one adjustment per submittal?*

Yes you may use any combination of the AVR adjustments. To combine the AVR adjustments, use the *Multiple AVR Adjustments* form found in the appendices of the Rule 2202 Compliance Forms package.

24. *Can my company get credit for an employee who arrives at work one or two days in the peak window and some days outside of the peak window (off-peak)?*

Yes. An employer is able to receive AVR credit for employees who begin work outside of the peak window by using the off-peak AVR adjustment calculation. Please see the peak and off-peak explanation in section V. *Counting Employees in Peak and Off-Peak Window* of this document.

25. *How can the compressed work week (CWW) credit be determined when employees work at a 24 hour/7 day-a-week worksite and the employees' days off are assigned on a rotating schedule?*

In all cases, the compressed work week (CWW) credit can only be taken when all days worked and all days off fall within the established AVR survey period as found in section II.B.2. *AVR Credits* of the ECRP Guidelines.

For example, in order to take CWW credit for a 3/36 work schedule, the employee must begin work during the established AVR survey period for all three work days. If one work day falls outside of the established survey period then no CWW credit may be taken and those days not worked would be reported as *Other*. Please read the CWW discussion in section V. *Compressed Work Week* of this document for more details.

III. Number of Surveys with Errors (NSE) and No Survey Response (NSR)

In the past, the number of surveys with errors as well as the number of unreturned surveys, were combined in the *No Survey Response* (NSR) category, causing some confusion for ETCs. The purpose of adding the *Number of Surveys with Errors* (NSE) line is to provide a tool to help ETCs identify and report survey errors, and, if appropriate, correct them. The addition of this line will clearly identify the surveys with errors and those surveys which were simply not returned.

Use of the NSE line allows credit to be taken for the days that are completed correctly on the employee survey. This may help some employers achieve the required 60% survey response rate and assist employers in achieving their AVR performance requirement.

If a survey is returned completely blank, it is counted in the NSR line. If a survey is returned with some days completed and some days blank, some credit may be taken for the days which information was provided on that survey. For example, if one day on the survey form is left blank and the remaining days were marked as carpool days, that one day is tallied as NSE and carpooling credit is taken for the remaining days.

The NSE and the NSR lines are equivalent to the *Drive Alone* category, therefore, it is to the employers' advantage to minimize the number of NSE and NSR responses. The use of NSE reporting encourages closer scrutiny of surveys and gives ETCs additional information when reviewing their survey results. High survey error rates, reported as NSE, will affect the survey response rate. Employers with high error rates may be contacted by AQMD staff to discuss their survey results.

Note that the use of the NSE line is optional, therefore it is acceptable to continue to use only the NSR line.

IV. Counting Employees - Peak and Off-Peak Window

Employers often have employees whose work schedules overlap the established AVR survey period. Employees may also have changing shifts where the employee begins work outside of the peak window. Employers may receive the off-peak credit for these employees.

To receive off-peak credit for the employees with overlapping schedules, all employees must be surveyed. Employers must carefully review the survey information provided for each day of the survey week to ensure that the peak AVR data is accurate and that the appropriate AVR adjustment credits are identified. Remember, the same AVR survey standards apply to surveying off-peak employees (i.e., 60% minimum survey response, use the same AVR survey period, etc.).

Example 1

An employee working a Wednesday through Sunday work schedule marks his/her survey (Table 1) as follows:

- Began work Wednesday through Sunday at 7 a.m.
- Monday and Tuesday are the scheduled days-off.
- Carpooled all five work days.
- The established AVR survey period is Monday through Friday.

**Table 1. Peak/Off-Peak Example 1
Employee Survey**

Mode	Sunday 7:00 AM	Monday	Tuesday	Wednesday 7:00 AM	Thursday 7:00 AM	Friday 7:00 AM	Saturday 7:00 AM
Carpool	✓			✓	✓	✓	✓
Other		✓	✓				

The survey results in Table 1, show that the employer would only receive carpool credit for the three days (Wednesday, Thursday, and Friday) during the survey week that the employee carpoled because those days are within the established AVR survey week. Remember that the off-peak days for calculating the AVR must be the same as the peak AVR survey period.

The ETC would summarize the data from Table 1 as follows:

**Table 2. Peak/Off-Peak Example 1
Weekly Employee Survey Summary for the Peak Window**

Mode	Monday	Tuesday	Wednesday	Thursday	Friday
Carpool			✓	✓	✓
Other	✓	✓			
Off-Peak					

Additional Notes

When collecting survey data from employees for peak and off-peak activities ETCs must:

- Ensure that employees who report at any time in the peak window, are included in the peak window AVR calculation.
- Count employees once to determine the survey response rate.
 - o If the employee is in the peak window, that employee's response is counted toward the peak window survey response rate.

- If the employee only reports in the off-peak, that employee's response is counted toward the off-peak window survey response rate.
- Ensure that employees mark their surveys with actual times they began work and commute modes for each day during the survey week.
- Ensure that off-peak employees are surveyed during the same survey week as the peak window employees.
- Ensure that the off-peak survey data is based on the same five consecutive days that the majority of peak window employees report to work used as their survey period.

Example 2

An employee working a 4/10 CWW schedule marks his/her survey (Table 3) as follows:

- Reported to work Tuesday through Friday.
- Tuesday through Thursday began work at 7 a.m.
- Friday began work at 3 p.m.
- Carpooled all four days.
- The established AVR survey period is Monday through Friday, 6 a.m. – 10 a.m.
- CWW day-off is Monday.

Table 3. Peak/Off-Peak Example 2
Employee Survey

Mode	Monday	Tuesday 7:00 AM	Wednesday 7:00 AM	Thursday 7:00 AM	Friday 3:00 PM
Carpool		✓	✓	✓	✓
4/10 Compressed Day Off	✓				
Other					

To receive peak and off-peak credit the employer would summarize the survey data two ways. First, summarize the peak window data from the employee survey (Table 3) as follows:

Table 4. Peak/Off-Peak Example 2
Weekly Employee Survey Summary for the Peak Window

Mode	Monday	Tuesday	Wednesday	Thursday	Friday
Carpool		✓	✓	✓	
4/10 Compressed Day Off					
Other	✓				
Off-Peak					✓

Peak survey summary form data:

- Peak window carpool credits are marked for Tuesday through Thursday.
- The *4/10 Compressed Work Week Day(s) Off* boxes are not marked because one of the four work days falls outside of the established peak window AVR survey period. Therefore, the *CWW Days Off* are marked as *Other* and no CWW credit is allowed. Please see the CWW discussion in section V. *Compressed Work Week* of this document for more details.
- Saturday and Sunday are not counted in the AVR calculation since they fall outside of the established AVR survey week.
- Friday is marked as *Off-Peak*. If employees begin work at least one day within the peak window they are included in the peak window calculation, however, when they begin work outside the peak window this is summarized as *Off-Peak*.

The off-peak data from the survey data shown in Table 3 is summarized as follows:

Table 5. Peak/Off-Peak Example 1
Weekly Employee Survey Summary for Off-Peak

Mode	Monday	Tuesday	Wednesday	Thursday	Friday
Carpool					✓
4/10 Compressed Day Off					
Other	✓				
Peak		✓	✓	✓	

Off-peak tabulated survey:

- Only Friday is marked as carpool.
- Tuesday through Friday are marked as *Peak* because those commute modes have already been counted in the peak survey summary.
- The CWW day is marked as *Other* because it falls outside of the AVR survey period.

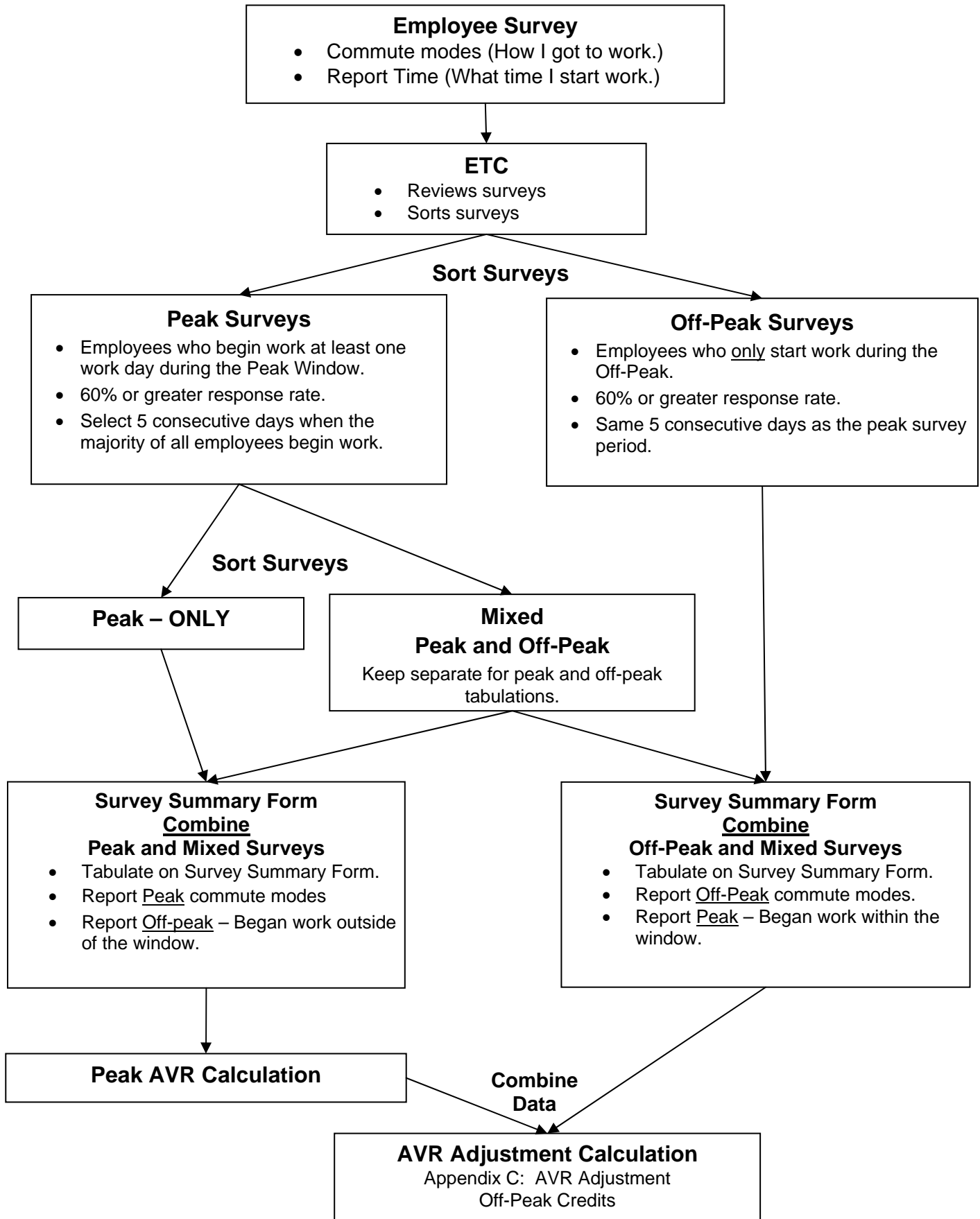
Additional Notes

When collecting data from employees whose morning and afternoon reporting schedules overlap, as in the example above, ETCs must:

- Ensure that employees who begin work at any time in the peak window are included in the peak window AVR survey calculation.
- Count employees once to determine the survey response rate. If the employee begins work one day in the peak window during the survey period, that employee's response is counted toward the peak window survey response rate only. Do not include this employee in the off-peak response rate.
- Ensure that employees mark their surveys with the time they actually begin work and their commute mode for each day of the survey week.

A flow chart illustrating how off-peak surveys are tabulated can be found in Figure 1 on the following page.

Figure 1. Survey Tabulation Guide



V. Counting Employees - Compressed Work Week (CWW)¹

One strategy employers may use to reduce employee commute trips is to implement a Compressed Work Week (CWW). The recognized CWWs are:

- 3/36 schedule - 3 days worked, 12 hours per day, 2 days off during the survey period;
- 4/40 schedule - 4 days worked, 10 hours per day, 1 day off during the survey period; or
- 9/80 schedule - 9 days worked, 80 hours per two weeks, 1 day off in a 2 week period during the survey.

For most employers, the established AVR survey period is the peak commute window of 6 a.m. to 10 a.m., Monday through Friday. The ECRP Guidelines state that CWW credits are allowed only when all days worked and all days off fall within the established AVR survey period. CWW credit may also be received for an employee working entirely in the off-peak window as long as all days worked and all days off fall within the established AVR survey period.

Employers whose operations exceed five days per week may survey all of the employees who begin work during the peak commute period of 6 a.m. to 10 a.m. to determine the appropriate survey period. However, the established AVR survey period is defined by the five consecutive days when the majority of the employees are scheduled to begin work during the peak commute window. The data from these five consecutive days are used in the calculation of the worksite's AVR.

The following examples illustrate how the CWW credit is calculated using a 7-day AVR survey.

CWW Example 1

The employer has a 7-day operation and has scheduled employees to report to work on different days of the week. The employer has determined that the established AVR survey period is Monday through Friday, 6 a.m. – 10 a.m. (shaded area in Table 1). The established AVR survey period is the five consecutive days when the majority of employees are scheduled to report to work during the peak window.

The employee in this example has marked the survey (Table 6) as follows:

- Began work at 7 a.m. on Monday, Tuesday, and Friday
- Drove to work alone on the three work days.
- 3/36 Compressed Work Week days off are on Wednesday and Thursday.
- The remaining days, Saturday and Sunday, are marked as *Other*.

In this example the employer would be able to take CWW credit because all three of the employee's work days are within in the established AVR survey period.

¹ ECRP Guidelines, II.B.2. AVR Credits

Table 6. CWW Example 1
Day-Off Credit
Employee Survey

Mode	Sunday	Monday 7:00 AM	Tuesday 7:00 AM	Wednesday	Thursday	Friday 7:00 AM	Saturday
Drive Alone		✓	✓			✓	
3/36 Compressed Day Off				✓	✓		
Other	✓						✓

CWW Example 2

The same employer as in Example 1 has an employee that has marked the survey (Table 7) as follows:

- Began work at 7 a.m. on Sunday, Tuesday, and Friday.
- Drove to work alone on the three work days.
- *3/36 Compressed Work Week* days off are on Monday and Wednesday.
- The remaining non-work days, Thursday and Saturday, are marked as *Other*.

Table 7. CWW Example 2
NO Day-Off Credit
Employee Survey

Mode	Sunday 7:00 AM	Monday	Tuesday 7:00 AM	Wednesday	Thursday	Friday 7:00 AM	Saturday
Drive Alone	✓		✓			✓	
3/36 Compressed Day Off		✓		✓			
Other					✓		✓

In this example the employee worked on Sunday, a day outside of the established AVR survey period (shaded area). The ECRP Guidelines state that all days worked must fall within the established AVR survey period, therefore, the employer does not receive CWW credit for the *compressed days off* for this employee. The survey should be summarized as follows (Table 8):

Table 8. CWW Example 2
NO Day-Off Credit
Survey Summary

Mode	Monday	Tuesday	Wednesday	Thursday	Friday
Drive Alone		✓			✓
3/36 Compressed Day Off					
Other	✓		✓	✓	

The employee survey was summarized as follows:

- “Drive alone” - Tuesday and Friday;
- CWW days-off – are reported as *Other*;
- Regular days-off – are reported as *Other*, and,
- Saturday and Sunday are not included because they are not within the established AVR survey period.

CWW Example 3

In certain cases, an employee may be required to work an additional day to meet a required 40 hour work week. This generally happens for an employee who works a 3/36 compressed work week and must work a 4th day during the established AVR survey period. In this case the employer may receive credit for one (1) CWW day off. Remember that the established work week is the five consecutive days when the majority of the employees report to work.

For example, an employee who normally works a 3/36 schedule, worked an additional day and has marked their survey (Table 9) as follows:

- Began work at 7 a.m. on Monday, Tuesday, Thursday, and Friday. The fourth work day is the additional day required to meet the 40 hour work week.
- Drove to work alone on the four work days.
- *3/36 Compressed Work Week* day off is Wednesday.

Table 9. CWW Example 3
Day-Off Credit
Employee Survey

Mode	Monday 7:00 AM	Tuesday 7:00 AM	Wednesday	Thursday 7:00 AM	Friday 7:00 AM
Drive Alone	✓	✓		✓	✓
3/36 Compressed Day Off			✓		
Other					

In this example the employer would be able to receive CWW credit because all of the employees work days are within in the established AVR survey week. The employee marks on their survey the 3/36 CWW day off to be consistent with the worksite's CWW work schedule. The employer is able to receive CWW credit for this employee while taking 3/36 CWW credit for the rest of the employees.

Additional Notes

Note that the ECRP Guidelines allow employers to develop alternatives to the recognized compressed work week schedules of 3/36, 4/40, and 9/80 upon written approval by the AQMD. The proposed alternative must ensure that the resulting trip reductions are real, surplus, quantifiable, and enforceable.

Employers, having a 9/80 compressed work week schedule may find it beneficial to survey during a week when the majority of employees take their CWW day off.

VI. Calculating the Off-Peak AVR Adjustment²

Many employers offer incentives to all of their employees to encourage them to participate in their ECRP. Often employees, whose work schedules vary, will carpool even though they are not reporting to work during the peak commute window. Acknowledging that employers' efforts affect all employees, not just those in the peak window, the ECRP Guidelines allow additional credits from employee trip reductions that occur outside of the peak window (i.e., the established AVR survey period). These additional trip reductions are called Off-peak AVR Adjustments.

To receive the off-peak credits, employers will need to:

1. Complete their annual AVR survey in accordance with the ECRP Guidelines.
2. Separate the peak window surveys from the off-peak surveys.
3. Verify that you have received a minimum 60% response rate for the peak and non-peak surveys.
4. Summarize all surveys in accordance with the criteria found in the ECRP Guidelines.
5. Calculate the peak window AVR using the method found in the Compliance Forms.
6. Calculate the off-peak window AVR using the method found in the Compliance Forms.

You should now have two sets of data for the peak and off peak employees.

We are almost ready to use the Off-Peak Credit equation. First, however, we must determine the creditable commute vehicle reduction or *CCVR*. *CCVR* is the amount of trip reductions from the off-peak employee commute data.

7. From the off-peak surveys find the data on Line ET (Employee Trips) and Line TV (Total Vehicles) in the *Weekly Employee/Vehicle Calculation (Off-peak) Form*.

² ECRP Guidelines, II.B.2. AVR Credits.

8. Using the off-peak information we can calculate the CCVR using the following equation:

$$\text{CCVR} = \text{Line ET} - \text{Line TV}$$

Now that we have the CCVR number we can now use the Off-Peak Credit equation.

9. Use the off-peak CCVR data from step 8 above and the peak AVR survey data (Line ET and Line TV) in the following equation:

$$\text{AVR} = \frac{E}{V - [\text{CCVR} \div 2.3]}$$

Where:

E = Line ET from the peak window employee AVR calculation.

V = Line TV from the peak window employee AVR calculation.

2.3 = Discount factor.

CCVR = Creditable commute vehicle reductions from off-peak window employees.

10. Complete the calculation. The result will be the adjusted AVR.

Off-Peak Calculation Example

Using the Off-Peak AVR equation we can apply some sample data to understand how to do the off-peak calculation.

In this example, we assume the following for this employer's worksite:

1. All employees were given surveys.
2. The survey response was greater than 90% and there were no survey errors.
3. The employer operates Monday through Friday with two work shifts. The late shift is smaller than the morning shift.
4. All employees who did carpool were in two person carpools.
5. The ETC summarizes the surveys separately as peak and off-peak data.

The first step is to summarize the Peak AVR data and enter it on the *Weekly Employee Survey Summary Form*. A summary of the survey results is shown in Table 10 below.

**Table 10. Off-Peak Calculation Example
Peak AVR Survey Summary**

Mode	Monday	Tuesday	Wednesday	Thursday	Friday	Total
A. Drive alone	73	73	73	73	73	365
C. 2 persons in vehicle	67	67	67	67	67	335
DD. Other NSR	10	10	10	10	10	50
Daily Totals	150	150	150	150	150	750

Mode	Column I	Vehicles	Column II
A. Drive alone	365	A. divided by 1	365
C. 2 persons in vehicle	335	C. divided by 2	167.5
ET. Employee Trips (sum of A. and C.)	700	TV. Total Vehicles	532.5
DD. Other NSR	50		

Let's calculate the peak AVR for the worksite. This will allow us to compare the results to determine if it is advantageous to report the off-peak results in the annual submittal.

$$\text{AVR (peak)} = \frac{\text{ET}}{\text{TV}} = \frac{700}{532.5} = 1.31$$

Using the peak survey data we find that the AVR for this worksite is 1.31.

Next, we need to complete the off-peak employee data.

As noted previously, the off-peak employees would also complete an AVR survey and the data is summarized the same way as the peak data. We will be using the off-peak data to determine the creditable commute vehicle reductions or *CCVR*.

A summary of the off-peak data is found in Table 11 below.

**Table 11. Off-Peak Calculation Example
Off-Peak AVR Survey Summary**

Mode	Monday	Tuesday	Wednesday	Thursday	Friday	Total
A. Drive alone	37	37	37	37	37	185
C. 2 persons in vehicle	33	33	33	33	33	165
DD. Other NSR	5	5	5	5	5	25
Daily Totals	75	75	75	75	75	375

Mode	Column I	Vehicles	Column II
A. Drive alone	185	A. divided by 1	185
C. 2 persons in vehicle	165	C. divided by 2	82.5
ET. Employee Trips	350	TV. Total Vehicles	267.5
DD. Other NSR	25		

From the off-peak survey data, find the data on Line ET-Employee Trips and Line TV-Total Vehicles. Using this data, we calculate the *CCVR* as follows:

$$\begin{aligned} \text{CCVR} &= \text{Line ET} - \text{Line TV} \\ &= 350 - 267.5 \\ &= 82.5 \end{aligned}$$

Now that we know the *CCVR* number, we can use it and the peak AVR data in the Off-Peak Credit equation.

$$\begin{aligned} \text{AVR (adjusted)} &= \frac{E}{V - (\text{CCVR} \div 2.3)} \\ &= \frac{700}{532.5 - (82.5 \div 2.3)} \\ &= 1.41 \end{aligned}$$

We can now compare the off-peak AVR results with the peak window AVR of 1.31. This example shows that the inclusion of the off-peak employees would increase the worksite's AVR to 1.41.

VII. Calculating the Reduced Staffing AVR Adjustment³

Employers may receive additional trip reduction credits that have been discounted from reduced staffing occurrences, such as school recess/breaks, inventory, or temporary facility closures as approved by the AQMD. This credit is not allowed for staff reductions resulting from actions such as layoffs, relocations, transfers, facility closures, or temporary closures that are part of regularly scheduled facility vacations. Employers should contact AQMD staff prior to carrying out any activity related to the reduced staffing AVR adjustment to verify the appropriate use.

To receive the reduced staffing AVR adjustment, employers must conduct a survey during a "typical work week" and conduct a second survey during a "typical work week" when the reduced staffing occurs. The AVR survey must be performed in accordance with the ECRP Guidelines for both the typical work week and reduced staffing week.

The reduced staffing credit may be calculated as follows:

1. Conduct the AVR survey for a typical work week when the majority of employees begin work during the regular operating schedule.

³ ECRP Guidelines, II.B.2. AVR Credits

2. Calculate the worksite AVR using the regular operating schedule survey data. You will need the data from Line ET and Line TV from the *Weekly Employee Survey Summary Form*.
3. Conduct the AVR survey for the reduced staffing work week.
4. Use the AVR calculation method from the Compliance Forms to determine the Line TV for the reduced staffing work week.
5. Determine the number of work days that are considered reduced staffing schedule days.
6. Determine the number of regularly scheduled operating days for the worksite work week by subtracting the reduced staffing scheduled days (Tr) from the total annual operating workdays (T):

$$T_n = T - T_r$$

Where:

T_n = Regular scheduled operating days

T = Total annual operating work days.

Employers may use the following default values:

260 days for a 5 day work schedule

365 days for a 7 day work schedule

T_r = Reduced staffing scheduled days

Be sure to save these numbers because you will be using them in the final calculation.

7. Using the peak window data from step 3, vehicle trip data from step 5, and the number of reduced staffing days from step 7, you will use the formula from the ECRP Guidelines:

$$AVR = \frac{E \times T}{[V_n \times T_n] + [V_r \times T_r \times 1.15]}$$

Where:

E = Line ET from the AVR calculation (from step 3).

T = Total number of annual operating workdays for the worksite.

V_n = Line TV from the AVR calculation (from step 3).

T_n = Total number of regularly scheduled operating days for the worksite (from step 6).

V_r = Line TV from the AVR calculation for the reduced staffing schedule (from step 5).

T_r = Total number of reduced staffing scheduled days (from step 6).

1.15 = Discount factor.

8. Complete the calculation. The result will be the adjusted AVR.

Note that the survey data for the typical work week cannot be more than 6 months old at the time of submittal, while the reduced staff survey data cannot be older than 12 months old at the time of program submittal.

Reduced Staffing Calculation Example

We can apply some sample data to understand how to do the reduced staffing calculation. In this calculation example, we assume the following for this employer's worksite:

1. All employees were given surveys.
2. The survey response was greater than 90% and there were no survey errors.
3. Employer operates Monday through Friday.
4. All employees who participated in ridesharing were in two person carpools.
5. The worksite operates 260 days per year.
6. The worksite reduces staff for the months of June and July, for a total of 42 work days.
7. The ETC surveyed the employees at two different times. Once during a typical work week and a second time during typical work week in June.
8. The ETC summarizes the data from the two surveys separately.

The first step is to summarize the regular schedule AVR data and enter it on the *Weekly Employee Survey*. A summary of the data is shown in Table 12 below.

**Table 12. Reduced Staffing Calculation Example
Regular Schedule AVR Survey Summary**

Mode	Monday 8:00 AM	Tuesday 8:00 AM	Wednesday 8:00 AM	Thursday 8:00 AM	Friday 8:00 AM	Total
A. Drive alone	73	73	73	73	73	365
C. 2 persons in vehicle	67	67	67	67	67	335
DD. Other NSR	10	10	10	10	10	50
Daily Totals	150	150	150	150	150	750

Mode	Column I
A. Drive alone	365
C. 2 persons in vehicle	335
ET. Employee Trips (sum of A. and C.)	700
DD. Other NSR	50

Vehicles	Column II
A. divided by 1	365
C. divided by 2	167.5
TV. Total Vehicles	532.5

We can calculate the peak window AVR for the worksite.

$$\text{AVR (peak)} = \frac{\text{ET}}{\text{TV}} = \frac{700}{532.5} = 1.31$$

The regular schedule AVR for this worksite is 1.31. This information will help us in determining if it is advantageous to report the reduced staffing results in the annual submittal.

Next, we need to complete the reduced staffing employee data.

As noted previously, the employees during the staff reductions would also complete an AVR survey and the data is summarized the same way as the regular schedule data. We will be using this data for the reduced staffing equation.

The summary of the reduced staffing survey data is found in Table 13 below.

**Table 13. Reduced Staffing Calculation Example
Reduced Staffing AVR Survey Summary**

Mode	Monday 3:00 PM	Tuesday 3:00 PM	Wednesday 3:00 PM	Thursday 3:00 PM	Friday 3:00 PM	Total
A. Drive alone	37	37	37	37	37	185
C. 2 persons in vehicle	33	33	33	33	33	165
DD. Other NSR	5	5	5	5	5	25
Daily Totals	75	75	75	75	75	375

Mode	Column I
A. Drive alone	185
C. 2 persons in vehicle	165
ET. Employee Trips	350
DD. Other NSR	25

Vehicles	Column II
A. divided by 1	185
C. divided by 2	82.5
TV. Total Vehicles	267.5

From the regular schedule and reduced staffing surveys, we now can fill in the different values for the reduced staffing equation as follows:

E = 700 from Line ET in Table 12.

T = 260 workdays for the worksite.

V_n = 532.5 from Line TV in Table 12.

This is the number of vehicles trips during the regular schedule.

T_n = 218 is the number of regularly scheduled operating days for the worksite calculated by:

$$218 = 260 \text{ regular days} - 42 \text{ reduced days}$$

V_r = 267.5 from Line TV in Table 13.

This is the number of vehicles trips during the reduced staffing schedule.

Tr = 42 reduced staffing days.
 1.15 = Discount factor.

$$\begin{aligned}
 \text{AVR (adjusted)} &= \frac{E \times T}{[V_n \times T_n] + [V_r \times T_r \times 1.15]} \\
 &= \frac{700 \times 260}{[532.5 \times 218] + [267.5 \times 42 \times 1.15]} \\
 &= \frac{182,000}{116,085 + 12,920.25} \\
 &= \frac{182,000}{129,005.25}
 \end{aligned}$$

$$\text{AVR (adjusted)} = 1.41$$

Comparing the regular schedule AVR of 1.31 to the reduced staffing AVR of 1.41, we find that there is an improvement in the worksite's AVR.

VIII. Additional Assistance

Staff is available to answer questions and resolve issues not discussed in this document.

Should you have additional questions you may contact us by calling the Transportation Programs hotline at (909) 396-3271.

All Rule 2202 compliance forms and additional support information can be found on the AQMD Transportation Programs web site at www.aqmd.gov/trans/.