

## **APPENDIX D2**

### **Purpose and Rationale for Proposed Appendix A**

#### **On-Board Diagnostic (OBD) Requirements of On-Road Motorcycles - CCR, Title 13, Sections 1958.2 and 1958.3**

California Government Code section 11346.2(b)(1) requires a description of the specific purpose for each proposed adoption, or amendment, the problem the agency intends to address with the proposed regulation, and the rationale for determining that each proposed adoption and amendment is reasonably necessary to both carry out the purposes of the California Air Resources Board (CARB) staff's Proposal and to address the problems for which it is proposed. **Applicable to all sections in this Appendix are the following:**

- It is necessary to create the "OBD Requirements for On-Road Motorcycles," in order to comply with emission standards for 2028 and subsequent model year on-road motorcycles in title 13, sections 1958.2 and 1958.3, which will help flag when issues arise with the on-road motorcycles (ONMCs), similar to on-road light duty and medium duty vehicles.
- The provisions are necessary to ensure California achieves reduced emissions while providing a path for the regulated industry to certify their on-road motorcycles (ONMCs) and to provide clarity to the regulated industry.
- The general summary and rationale and descriptions of necessity in Section V of the Staff Report: Initial Statement of Reason are incorporated into this Appendix and apply to all provisions below.
- The provisions are necessary to implement and enforce OBD requirements.
- All timeframes were chosen to achieve consistency with similar provisions in the light duty and medium duty regulations. They were also chosen to provide the regulated industry with sufficient time to submit information or take certain actions while balancing CARB's need to receive information, engage in certification activities, and implement the regulations.

#### **Section 1958.2 Malfunction and Diagnostic System Requirements-- 2028 and Subsequent Model-Year Motorcycles**

##### **Subsection (a)(1)**

## **1. Purpose**

The purpose of this subsection is to require manufacturers (except small volume manufacturers) to equip a percentage of their 2028 and subsequent model year class III street-use motorcycles with On-Board Diagnostics (OBD) that meet all requirements according to a phase in schedule (30% by 2028, 60% by 2029, and 100% by 2030).

## **2. Rationale**

This subsection is necessary to phase in use of OBD, which is proven to identify emission noncompliance and notify the ultimate purchaser when emission components are not working. The chosen percentage phase-in amounts appropriately balance the need to reduce emissions with manufacturers' concerns. See also Appendix D2, subsection (h)(5) for the rationale on phase-in requirements for exhaust emission standards for model years 2028-2030.

### **Subsection (a)(2)**

#### **1. Purpose**

The purpose of this subsection is to provide an exemption from OBD requirements for manufacturers selling small numbers of vehicles, for which in the case of class III motorcycles the threshold is to be set at 300 class III motorcycles produced and delivered for sale in California, based on a three-year average, per each manufacturer and its related companies. For the purpose of providing clarity, this subsection provides for four different scenarios that CARB expects could occur (exceeding 299 due to corporate acquisitions, exceedance of 299 but below 500, exceeding 500, first time certifiers) to describe when there are limits to the exemption.

#### **2. Rationale**

This subsection is necessary to establish the criteria for exemption from the OBD requirements specified in CCR 13 Section 1958.2. It is also necessary to specify what the sales threshold is and provide specifics for how average sales are to be determined for the purpose of determining whether or not compliance with CCR, title 13, section 1958.2 is necessary. This exemption is intended to ease the burden for manufacturers producing few vehicles by not requiring them to invest in the development of OBD systems. This subsection specifies that a manufacturer whose produced and delivered motorcycles exceeds 299 sales as a result of acquisitions, mergers, or purchase by another manufacturer, would not be eligible for the exemption since they should be able to anticipate the increase in average numbers. A manufacturer whose numbers increase to over 299, but less than 500, where the increase is a result of increases in production, would need to include an OBD system

beginning with the second year after the numbers exceed 299. This is to allow manufacturers lead time to develop and implement an OBD system if they did not anticipate the need for an OBD system. If a manufacturer's average exceeds 500 as a result of increase in production, they will not be eligible for the exemption and will be required to have OBD the first year after the increase. CARB expects that if such a large increase is experienced, manufacturers should be well aware that the increase would push them over the 300 average threshold ahead of time. Manufacturers seeking certification for the first time in California should use average projected production numbers for the first three years in place of a three year average of actual production numbers. In year two, new manufacturers would use an average of year one production numbers and years two and three projected numbers. In year three, they would use years one and two reported production numbers with projected numbers for year three only. The 300 California sales per year number has been CARB's limit for small volume manufacturers since at least 2008. You can find this in the emission limit table in tit 13 section 1958. The purpose was to be consistent with the current requirement.

## **Subsection (b)(1)**

### **1. Purpose**

The purpose of subsection (b)(1) is to establish that 2028 and subsequent model year class III street-use motorcycles shall be equipped with an OBD stage II system as required by EU 168/2013, for which the functional requirements are specified in EU 44/2014.

### **2. Rationale**

The addition of this subsection is necessary to establish what the harmonized functional OBD requirements will be for 2028 and subsequent model years. A reference is included to EU 168/2013 and EU 44/2014 to guide manufacturers to the proper functional OBD requirements. This subsection is also necessary to specify that Enduro and Trial motorcycles are exempt from the OBD stage II requirements that apply to all other class III motorcycles. They are required to have OBD stage I, and therefore are exempt from OBD stage II major monitoring requirements specified in EU 44/2014, as well as fuel system monitoring and readiness status indication as specified in subsections (b)(2) and (b)(3) of 1958.2.

## **Subsection (b)(2)**

## **1. Purpose**

The purpose of this section is to specify the requirements for the fuel system monitor, to ensure it is able to maintain emissions below the emissions standard specified in section 1958(h).

## **2. Rationale**

This section is necessary to specify the requirements that will apply to new Class III motorcycles for model years 2028 and subsequent, beyond what is required in EU 44/2014 as required by EU 168/2013. Fuel system monitoring is an additional OBD monitor for which the implementation of will help to prevent increased emissions due to failures of the motorcycle fuel system.

### **Subsection (b)(2)(A)**

#### **1. Purpose**

The purpose of this subsection is to establish that the fuel system monitor is to monitor the fuel system for faults and degradation that would cause non-compliance with the emission standards specified in 1958(h).

#### **2. Rationale**

This subsection is necessary to set the emissions target for which monitoring of fuel system faults and degradation should indicate a failure. The values for emissions standards specified in 1958(h) are used in this regulation to set OBD threshold limits, for which exceedance leads to a fault code being stored and malfunction indicator lamp activated.

### **Subsection (b)(2)(B)**

#### **1. Purpose**

The purpose of this subsection is to specify the malfunction criteria for the fuel system monitor, given differing available control technologies and possible failure modes, and to reference the OBD emissions threshold which is specified in EU 168/2013. This subsection is also necessary to make allowances for and specify cases where the malfunction criteria may be adjusted for certain environmental or operating conditions.

#### **2. Rationale**

Given that there are different potential modes of failure of the fuel system given different available control technologies, this subsection is necessary to specify each

of the failure modes that could lead to a malfunction and at what level of emissions a malfunction should be indicated. In addition, it is necessary to specify that the malfunction criteria can be changed to compensate for changes in altitude and other operating conditions, at the manufacturer's discretion.

### **Subsection (b)(2)(C)**

#### **1. Purpose**

The purpose of this subsection is to specify the monitoring conditions for the fuel system monitor. It specifies that fuel system monitoring is a continuous monitor and should always be monitoring for malfunctions.

#### **2. Rationale**

This section is necessary to specify that the fuel system should continuously monitor for failures, since air fuel ratio is something that can change very quickly and if a failure is not identified, can rapidly lead to degradation of the catalyst.

### **Subsection (b)(2)(D)**

#### **1. Purpose**

The purpose of this subsection is to specify the MIL illumination and fault code storage requirements for fuel system malfunctions.

#### **2. Rationale**

This subsection is necessary to specify when pending fault codes are to be stored for fuel system malfunctions, when a MIL is to be activated, when pending fault codes can be erased, the conditions for freeze frame storage, the storage of fuel system conditions, and when the MIL can be extinguished. Since fuel system monitoring is a continuous monitor and air fuel ratio can change rapidly, additional information is necessary to determine when a malfunction is present and to facilitate proper repair. This section is necessary to specify the specific conditions under which a malfunction is to be indicated for fuel system monitoring since it differs from those of other monitors.

### **Subsection (b)(3)**

#### **1. Purpose**

The purpose of this subsection is to specify the OBD readiness status requirements, which monitors this would apply to, and prevent the clearing or erasing of fault codes manually.

#### **2. Rationale**

This subsection is necessary to prevent manual clearing or erasing of fault codes and requires motorcycle operators to clear codes by operating the vehicle and allowing the diagnostics to run. In addition, it is necessary to specify that if disablement occurs due to the continued presence of extreme operating conditions (i.e. below -7°C, more than 2500 meters above sea level) for multiple driving cycles, the EO can approve the conditions and number of driving cycles before the subject monitor is indicated as complete once again. This subsection is also necessary to indicate the option to indicate readiness in the key-on, engine-off position, and the timeframe for such indication to the motorcycle operator.

## **Subsection (c)**

### **1. Purpose**

This section specifies the requirements for approval of OBD systems for certification.

### **2. Rationale**

This section is necessary to establish the requirements for approval of OBD systems so that manufacturers know what testing they must conduct, how to select test motorcycles, and what must be submitted to the Executive Officer to obtain approval.

## **Subsection (c)(1)(A)**

### **1. Purpose**

The purpose of this subsection is to specify that for 2028 and subsequent model year motorcycles, manufacturers must test their OBD systems as required in the European Union (EU), and to specify the acceptable test fuels.

### **2. Rationale**

This section provides the specific references to the test procedures which are used in the EU regulations to demonstrate compliance with OBD requirements. Since CARB is harmonizing OBD requirements with the EU requirements, it is necessary to reference the specific sections within the EU requirements which must be followed to obtain OBD approval. CARB is requiring the use of California Certification gasoline but will allow the use of the test fuel required per the EU to remove the need for duplicative testing in cases where manufacturers are certifying in both jurisdictions. This is intended to reduce costs and duplicity.

## **Subsection (c)(1)(B)**

### **1. Purpose**

The purpose of this section is to specify that in addition to OBD system testing requirements specified in the EU regulations, manufacturers must also test their Fuel System Monitor, with specific requirements. This section also specifies the requirements for fuel system monitor testing, which includes following the procedural steps specified in EU 134/2014, and to specify what the pass/fail criteria are for such testing. This section also specifies the different test procedures to be used depending on the fuel system monitoring strategy used.

## **2. Rationale**

This section is necessary to provide the methods and criteria as evidence that the fuel system monitor equipped on motorcycles functions as intended to effectively monitor the fuel system and prevent increases in emissions due to a faulty fuel control system.

### **Subsection (c)(2)**

#### **1. Purpose**

The purpose of this subsection is to specify that CARB may perform confirmatory testing to verify the emission test data submitted by the manufacturer, to specify that CARB has the authority to install deteriorated or malfunctioning components to confirm the OBD system can detect faults properly, and to specify that the Executive Officer may request a test vehicle, test equipment, and deteriorated components necessary to duplicate manufacturers testing.

#### **2. Rationale**

This section is necessary to provide the Executive Officer everything needed to replicate OBD emission testing performed by the manufacturer to confirm the OBD system performs as indicated by the test data submitted by the manufacturer.

### **Subsection (d)(1)**

#### **1. Purpose**

This subsection specifies that for 2028 and subsequent model year motorcycles, the certification documentation that must be submitted is specified in EU 901/2014. This subsection also specifies that manufacturers may submit data for a single engine family which is representative of multiple engine families, and these are to be known as OBD families. The criteria for OBD family designation is specified in EU 44/2014. This subsection also specifies that one or more documentation requirements may be waived, with Executive Officer approval that the documentation would be redundant or unnecessarily burdensome.

#### **2. Rationale**

This subsection is necessary to specify the certification documentation submittal requirements for 2028 and subsequent model year motorcycles, and to facilitate certification of OBD families across jurisdictions with minimal burden. For manufacturers who first obtain type approval in the European Union for sale of their motorcycles, the same certification documentation submitted in the EU can be submitted to the CARB Executive Officer for review and approval, without the need to create a new documentation package. This subsection is also necessary to allow for the use of groupings of engine families into a single OBD family, to reduce the need for additional documentation submittal for engine families with similar OBD system design. This subsection is also necessary to specify an exemption, subject to Executive Officer approval, for documentation requirements which would be redundant or unnecessarily burdensome to generate, thus easing the burden further.

### **Subsection (d)(2)**

#### **1. Purpose**

The purpose of this subsection is to specify the certification documentation submittal requirements to obtain certification for the Fuel System Monitoring requirement. This includes following the same format (provided for in EU 901/2014) required for documentation submittal for other major monitors required under EU 44/2014.

#### **2. Rationale**

This subsection is necessary to specify what manufacturers must submit in order to obtain certification with the Fuel System Monitoring requirement. Requiring this documentation to be submitted in the same format as other monitors required per EU 44/2014 (using the format specified in EU 901/2014) is intended to simplify the documentation submittal process. This subsection is also necessary to specify what must be submitted to show the testing required Fuel System Monitoring certification testing has been completed and that the Fuel System Monitor complies with the requirements in this regulation.

### **Subsection (d)(3)**

#### **1. Purpose**

The purpose of this subsection is to specify who and where to send OBD certification documentation to.

#### **2. Rationale**

This subsection is necessary to provide the address for OBD certification documentation submittal, as well as to provide the email address for electronic submittal.



## **Subsection (d)(4)**

### **1. Purpose**

The purpose of this subsection is to allow manufacturers to apply for conditional certification prior to the submittal of required test data required for OBD certification if manufacturers have a valid reason for a delay in data submittal.

### **2. Rationale**

This subsection is necessary to provide manufacturers the ability to certify their OBD systems if there is a valid delay in data submittal for required certification testing. The reason for the delay must be approved by the Executive Officer, and the Executive Officer will determine whether or not to approve the conditional certification depending on the reason for the delay, the length of time until data will be available, and the manufacturer's demonstrated previous success in submitting required data prior to certification.

## **Subsection (e)(1)**

### **1. Purpose**

The purpose of this subsection is to specify the functional in-use performance monitoring (IUMPR) requirements for 2028 and subsequent model year motorcycles, which are specified in EU 44/2014.

### **2. Rationale**

This subsection is necessary to specify the functional IUMPR monitoring requirements for 2028 and subsequent model year motorcycles. The functional requirements are given in EU 44/2014, which provides all of the specifics for how the ratio is defined, how the numerators and denominators are defined and when they should be incremented, which monitors are subject to minimum ratios, and additional information relevant to IUMPR functionality.

## **Subsection (e)(2)**

### **1. Purpose**

The purpose of this subsection is to specify the verification and reporting requirements for IUMPR data, including when data should be submitted for each OBD family, what data are required to be submitted, the number of vehicles for which data submittal is required, and to specify conditions in which the minimum sample size may be reduced per Executive Officer approval. This subsection also specifies

that data from other jurisdictions may be accepted upon request of the manufacturer, with Executive Officer approval.

## **2. Rationale**

This subsection is necessary to specify what data are to be submitted regarding IUMPR for motorcycles, to demonstrate that the equipped OBD systems are functioning as intended, and that these monitors are running and therefore would be detecting malfunctions in-use. It is necessary that manufacturers supply this data relatively soon after these motorcycles are introduced into commerce or the start of normal production to ensure monitors are running properly in-use early enough for corrective action to be taken if necessary. Given the low number of motorcycles sold in California, minimum sample sizes have been set low enough to ensure that manufacturers will be able to reasonably gather the required data needed to demonstrate IUMPR requirements are being met. Motorcycle IUMPR sample size cutoffs are based on annual sales of street-use motorcycles within an OBD family. If manufacturers are unable to obtain enough data from CA motorcycles, lower sample sizes or data from other jurisdictions may be considered. Data collected should be from motorcycles with usage patterns representative of California ambient temperatures and usage patterns (i.e. above -7°C, below 2500 meters elevation, including data representative of both highway, rural road, and/or urban use). Data submitted include data which are to be manually recorded (odometer reading, VIN, ECM software calibration identification number), and those which are reported electronically through a scan tool. Note that for odometer reading, this data should be reported from the vehicle odometer and can be manually recorded, and does not need to be a data parameter included in the OBD data download. This subsection is also necessary to provide who and where to send IUMPR data to by providing the correct address and email address which data can be submitted to.

### **Subsection (f)(1)**

#### **1. Purpose**

The purpose of this subsection is to specify that 2028 and subsequent model year motorcycles may be granted certification even if full compliance with the OBD functional requirements cannot be achieved. In this case, certification is granted per Executive Officer approval with a deficiency.

#### **2. Rationale**

This subsection is necessary to establish that certification can still be granted in cases where the OBD system does not meet all of the functional requirements, if a good-faith effort is attempted to meet the requirements, with Executive Officer approval. A

good faith effort to meet a monitoring requirement means that the manufacturer attempted to include a fully compliant OBD monitor by evaluating and considering the best available monitoring technology, and come into compliance as expeditiously as possible. This should be demonstrated to the Executive Officer by providing a full justification which outlines the efforts made to meet the requirements for the monitor, including hardware used, monitoring logic, calibration and test data, as well as a description of how the determination of noncompliance with the requirements was determined.

## **Subsection (f)(2)**

### **1. Purpose**

The purpose of this subsection is to specify that fines apply to the third and subsequent deficiencies, and to establish that fines will apply to any monitoring system deficiencies which are completely absent from the OBD system.

### **2. Rationale**

This subsection is necessary to specify when fines apply for deficiencies. The first two deficiencies are free of fines, given a good faith effort was attempted to implement the required monitor, and the monitors are not completely absent from the OBD system. If a monitor is completely absent, fines apply even if there are fewer than three deficiencies.

## **Subsection (f)(3)**

### **1. Purpose**

The purpose of this subsection is to establish fine amounts for major and minor deficiencies. Major deficiencies are to be \$30 per motorcycle for non-compliance with the major monitors listed, and minor deficiencies are to be \$15 per motorcycle for non-compliance with any other requirement of section 1958.2. This subsection also establishes the maximum fine amount (\$300) and specifies where payment should be directed for deficiencies.

### **2. Rationale**

This section is necessary to specify what the fine amounts are for deficiencies and the maximum fine amount. The first two deficiencies are not subject to fines so long as the monitor is not completely absent from the OBD system and a good faith effort is made on the part of the manufacturer to meet the requirements. The issuing of fines for deficiencies will encourage manufacturers to develop effective OBD systems which meet the requirements. The decision to specify fines of \$30 for major monitors and \$15 for minor monitors is based on a scaled down version of light-duty vehicle

OBD deficiency fines (which are \$50 and \$25, respectively). The maximum limit of \$300 was also scaled down from the light-duty vehicle OBD deficiency maximum fine limit of \$500. Due to the limited number of OBD monitors required for motorcycles as compared to light-duty vehicle OBD requirements, these limits are appropriate for motorcycles.

#### **Subsection (f)(4)**

##### **1. Purpose**

The purpose of this subsection is to establish that deficiencies can be carried over from previous model years, given a good faith effort has been made to meet the requirements and have made progress towards correcting the deficiency since the previous model year. This subsection also establishes that deficiencies are limited to two model years unless substantial hardware modifications and additional lead time are necessary to correct the deficiency, where in these cases they are limited to three years.

##### **2. Rationale**

This subsection is necessary to provide the allowance for deficiencies to be carried over so long as progress is being made towards correcting the deficiency. Manufacturers are limited to two years in most cases to correct the deficiency, giving adequate lead time to make the necessary corrections. In some cases, where substantial hardware modifications are necessary to make the correction and additional lead time is required, a maximum of three years may be approved per the Executive Officer.

#### **Subsection (f)(5)**

##### **1. Purpose**

The purpose of this subsection is to specify that deficiencies are not to be granted retroactively, except for as allowed for in subsection (f)(6).

##### **2. Rationale**

This section is necessary to ensure that deficiencies are applied for and granted prior to certification, except in limited circumstances. This ensures the environmental integrity of the certification program. It is expected that manufacturers will be able to identify deficiencies prior to certification. However, deficiencies may be granted retroactively as provided for in subsection (f)(6) if the deficiency is discovered post production during production motorcycle evaluation testing, required per subsection (g)(1).

## **Subsection (f)(6)**

### **1. Purpose**

The purpose of this subsection is to provide for a means for manufacturers to request retroactive deficiencies, if the deficiency is discovered during production motorcycle evaluation testing within the first six months after commencing normal production, if the conditions necessary for pre-certification deficiency determination are satisfied per subsection (f)(2), and it is determined that the manufacturer could not have reasonably anticipated the problem prior to production. This section also establishes that retroactive deficiencies are treated the same as normal deficiencies in regards to calculating fines.

### **2. Rationale**

Generally, it is expected of manufacturers that deficiencies will be identified prior to certification, and thus apply for deficiencies along with normal certification, however, in cases where deficiencies are not discovered until after normal production commences, this allows for the approval of deficiencies retroactively if the manufacturer could not have reasonably anticipated the identified the problem prior to commencement of normal production. This provision is necessary to provide for a process short of enforcement action to address issues with certification where there are deficiencies.

## **Subsection (f)(7)**

### **1. Purpose**

The purpose of this subsection is to establish that motorcycles which do not meet the requirements of section 1958.2 and are not approved for a deficiency are to be considered non-compliant and therefore subject to enforcement action.

### **2. Rationale**

This subsection is necessary to establish when motorcycles are to be considered non-compliant regarding the OBD requirements. This provision is necessary to alert manufacturers that if the deficiency requirements of subsections (f)(1)-(f)(6) are not met and the system does not meet the requirements of section 1958.2, then these motorcycles may be subject to enforcement action.

## **Subsection (g)(1)(A)**

### **1. Purpose**

The purpose of this subsection is to specify the time frame of six months after normal production begins for testing of new production motorcycles beginning in model

year 2028, to verify OBD system functionality and verify the monitoring requirements specified in section 1958.2 are being met satisfactorily and also specifies the address and how to submit results to CARB.

## **2. Rationale**

This subsection is necessary to specify that motorcycles should be tested shortly after production begins to ensure OBD systems are functioning as intended. The address and email for submission is necessary to instruct manufacturers on where to submit the test results.

### **Subsection (g)(1)(B)**

#### **1. Purpose**

The purpose of this subsection is to specify the selection process for production test motorcycles for verification of OBD monitoring requirements. This section also points out what testing is to be performed and for which cases the Executive Officer may waive the requirements for submittal of evaluation results.

#### **2. Rationale**

This subsection is necessary to lay out a selection process that ensures the manufacturer is developing all OBD systems across an OBD family well enough to meet the standards, by allowing the Executive Officer to choose which engine families to test.

### **Subsection (g)(1)(C)**

#### **1. Purpose**

The purpose of this subsection is to provide the evaluation requirements that must be followed to confirm the OBD system is functioning as intended, including confirming the OBD system can catch malfunctions either mechanically implanted or electronically simulated, that such malfunctions trigger MIL activation, verifying IUMPR software functionality, and specifying that such testing should be conducted on-road where possible.

#### **2. Rationale**

This subsection is necessary to specify how the OBD system evaluation should be conducted on selected test motorcycles and provide the criteria which indicate the motorcycle has passed the evaluation. This subsection is intended to provide for an evaluation that shows the OBD system is performing as intended in real-world situations by requiring such testing to be performed on-road.

## **Subsection (g)(1)(D)**

### **1. Purpose**

The purpose of this subsection is to require the submittal of a test report which provides all necessary information to indicate the outcome of the evaluation for the Executive Officer to review.

### **2. Rationale**

This subsection is necessary to ensure that all relevant test data is submitted for review, to confirm the OBD system is functioning as intended.

## **Subsection (g)(1)(E)**

### **1. Purpose**

The purpose of this subsection is to specify who and where to send OBD certification documentation to.

### **2. Rationale**

This subsection is necessary to provide the address for OBD certification documentation submittal, as well as to provide the email address for electronic submittal.

## **Subsection (g)(1)(F)**

### **1. Purpose**

The purpose of this subsection is to specify that production motorcycle evaluation testing can be used to identify OBD system deficiencies that were not found prior to certification.

### **2. Rationale**

If manufacturers were not able to identify a deficiency prior to the certification process, production motorcycle evaluation testing can be used as a means to identify such deficiencies after the fact and report them to the Executive Officer.

## **Subsection (h)(1)**

### **1. Purpose**

The purpose of this subsection is to specify which communications protocols for communication between motorcycle OBD systems and a scan tool are allowed for 2028 and subsequent model year motorcycles.

### **2. Rationale**

This section is necessary to specify which communications protocols will be allowed for 2028 and subsequent model year motorcycles. There are fewer protocols allowed for the 2028 and subsequent model year motorcycles, to sunset some of the older protocols allowed per EU 44/2014, to ensure that much of the common equipment used in California is compatible, including equipment used in BAR smog check, to help facilitate potential future inspection and maintenance programs for motorcycles. The protocols selected for this regulation are consistent with those allowed for the light-duty vehicle (LDV) sector in California and have a significant supplier base that can deliver compliant components. The combination of SAE J1979-2 with ISO 15765-4:2016 allows for the UDS protocol to be used in conjunction with CAN, since SAE J1979-2 provides guidance for which UDS messages to use, and ISO 15765-4 details which CAN protocol to use. CARB staff believes the use of UDS with CAN was intended under EU regulations by allowing the use of ISO 14229-3 with ISO 15031-5. CARB staff have identified ISO 14229-3 with ISO 15031-5 as incompatible due to ISO 15031-5 having no provisions to use UDS messages, ISO 14229-3 providing no direction on which UDS messages must be supported or used to carry out the required functions, and ISO 14229-3 not providing any information on which CAN protocol must be used. The combination of J1979 with ISO 15765-4:2016 is consistent with the EU allowed option, with J1979 being used since it is a newer version of the joint ISO 15031-5 cited in the EU and is more consistent with what is allowed in the LDV sector.

## **Subsection (i)**

### **1. Purpose**

The purpose of this subsection is to define that each provision of this section is severable and if any provision of this section is held to be invalid or unenforceable, the remainder of the article remains in full force and effect.

### **2. Rationale**

This subsection is necessary to preserve the overall intent of what the proposed regulation is set to achieve, even if unforeseen issues arise with enforcing any individual term of the proposed regulation.

## **Section 1958.3 Enforcement of Malfunction and Diagnostic System Requirements for 2028 and Subsequent Model-Year Motorcycles.**

### **Subsection (a)**

#### **1. Purpose**



The purpose of this subsection is to specify which vehicles are subject to the enforcement procedures specified in 1958.3, to provide the purpose, which is to establish those enforcement procedures, and provide the definitions of terms used in section 1958.3.

## **2. Rationale**

This subsection is necessary to identify what vehicles will be subject to enforcement of the OBD requirements specified in section 1958.2, to specify that the enforcement procedures are to be laid out in this section, and to provide definitions for the terms as they apply to this section.

### **Subsection (b)(1)**

#### **1. Purpose**

The purpose of this subsection is to establish the purpose of CARB-conducted enforcement testing.

#### **2. Rationale**

This subsection is necessary to specify that this testing is to ensure OBD systems on production motorcycles comply with the requirements of section 1958.2, and to establish that motorcycles which do not meet these requirements, and have been granted a deficiency, are functioning as expected given the deficiency. The outcome of this testing can be used to drive enforcement action.

### **Subsection (b)(2)**

#### **1. Purpose**

The purpose of this subsection is to provide authority for the Executive Officer to conduct routine testing on any production motorcycles that have been certified for sale in California, and to provide authority for the Executive Officer to conduct enforcement testing.

#### **2. Rationale**

This subsection is necessary to provide authority to the Executive Officer to conduct enforcement testing and specify that the Executive Officer can conduct enforcement action based on the findings of this testing, as well as information obtained through warranty information reports and field information reports.

### **Subsection (b)(3)(A)**

#### **1. Purpose**

The purpose of this subsection is to specify how motorcycle enforcement groups are to be defined for the purpose of conducting enforcement testing.

## **2. Rationale**

This subsection is necessary to specify how motorcycle enforcement groups are to be chosen by the Executive Officer, and that the Executive Officer can group multiple engine families and/or OBD families together for the purposes of conducting enforcement testing.

### **Subsection (b)(3)(B)**

#### **1. Purpose**

The purpose of this subsection is to specify the number of motorcycles to be tested for OBD emission and OBD ratio testing for enforcement, as well as enforcement testing to determine compliance with other functional requirements laid out in section 1958.2.

#### **2. Rationale**

This subsection is necessary to specify the number of vehicles to be tested for either OBD emission and OBD ratio testing or determining OBD system compliance per section 1958.2 for enforcement testing, since the number of test vehicles may be different for each.

### **Subsection (b)(3)(C)**

#### **1. Purpose**

The purpose of this subsection is to provide the discretion to the Executive Officer for determining the appropriate manner to procure motorcycles for OBD emission and ratio enforcement testing and all other enforcement testing, and to provide possible procurement protocols for doing so.

#### **2. Rationale**

This subsection is necessary to establish the authority for the Executive Officer to make determinations regarding how to most effectively procure motorcycles for OBD emission and ratio enforcement testing and all other enforcement testing, for which the selection protocol may differ for the two. The selection process for OBD emission and ratio enforcement testing should ensure that motorcycles are procured from multiple sources, whereas this is not necessary for other forms of enforcement testing.

### **Subsection (b)(3)(D)**

## **1. Purpose**

The purpose of this subsection is to specify the criteria for which motorcycles can be selected for enforcement OBD emission and ratio testing as well as that for other enforcement testing for motorcycles subject to the OBD requirements specified in 1958.2.

## **2. Rationale**

This subsection is necessary to clarify the criteria for which motorcycles the Executive Officer can choose for OBD emission and ratio testing as well as the other OBD requirements specified in 1958.2. These selection criteria are selected to ensure that any failures that occur during testing are tied to the manufacturer and thus can be enforced upon the manufacturer, as opposed to being the result of malfeasance on the part of the motorcycle owner/operator or an extraneous event such as the motorcycle being involved in a collision.

### **Subsection (b)(4)(A)**

#### **1. Purpose**

The purpose of this subsection is to provide the Executive Officer with the authority to perform modifications to the motorcycle as needed to test that the OBD system is properly detecting failures. It also gives the Executive Officer authority to request test equipment, software, control unit variables, data acquisition devices, and a method to unlock any production or prototype control units used by the manufacturer.

#### **2. Rationale**

This subsection is necessary to ensure the Executive Officer can perform a full evaluation of the motorcycle OBD system and have available any equipment or software needed to conduct this evaluation properly.

### **Subsection (b)(4)(B)**

#### **1. Purpose**

The purpose of this subsection is to specify the testing procedures applicable to OBD emission testing, which involves in-use testing of compliance with exhaust emission standards as well as chassis dynamometer testing in such a manner as to ensure all the monitoring conditions are met per the manufacturer's certification application.

#### **2. Rationale**

The purpose of this subsection is to clarify what type of emissions testing the Executive Officer can perform to ensure that the OBD system functions as intended

and is consistent with the information provided in the manufacturer's certification application. This can include either in-use testing, chassis dynamometer testing, or both as the Executive Officer sees fit.

### **Subsection (b)(4)(C)**

#### **1. Purpose**

The purpose of this subsection is to specify that the Executive Officer will download data from monitors required to track and report data for OBD ratio testing.

#### **2. Rationale**

This subsection is necessary to give the Executive Officer authority to download and handle OBD ratio data from tested motorcycles for enforcement testing, to ensure that data is meeting minimum required ratios.

### **Subsection (b)(4)(D)**

#### **1. Purpose**

The purpose of this subsection is to specify what other testing procedures can be employed by the Executive Officer to confirm compliance with any other requirements of section 1958.2.

#### **2. Rationale**

This subsection is necessary to specify that the Executive Officer can perform emission testing on-road, chassis dynamometer testing, and any other testing necessary to ensure compliance with the OBD requirements specified in 1958.2.

### **Subsection (b)(5)**

#### **1. Purpose**

The purpose of this subsection is to specify that, based on information gathered during testing under section (b)(4), that the Executive Officer can elect to conduct further testing of a subgroup of a motorcycles from the motorcycle enforcement group, if it is determined that the subgroup is sufficiently different from other motorcycles in the tested motorcycle enforcement group, and that the differences may indicate that the subgroup is non-conforming.

#### **2. Rationale**

This subsection is necessary to grant the Executive Officer the ability to perform additional testing on a subgroup of motorcycles within the tested motorcycle enforcement group. If it is determined that a subgroup of motorcycles within the

tested motorcycle enforcement group have different characteristics from the others and such differences may lead to that particular subgroup not conforming to the OBD requirements of section 1958.2. This is necessary to identify non-compliant motorcycle subgroups.

### **Subsection (b)(6)**

#### **1. Purpose**

The purpose of this subsection is to specify the conditions for failure of OBD emission enforcement testing, OBD ratio testing, and all other OBD testing which would indicate nonconformance of the OBD system and to specify under what conditions the Executive Officer may not consider an OBD system to be nonconforming.

#### **2. Rationale**

This subsection is necessary to provide the structure under which the Executive Officer will deem nonconformance of an OBD system for OBD enforcement testing, and what the criteria are for determining nonconformance resulting from OBD emission testing, OBD ratio testing, and all other OBD testing. This is necessary to ensure the integrity of the regulations and emission benefits are achieved.

### **Subsection (b)(7)**

#### **1. Purpose**

The purpose of this subsection is to specify the Executive Officer's obligations in regards to notifying the manufacturer of any determination of nonconformance of an OBD system resulting from enforcement testing, criteria and time frame for manufacturers to contest the determination, and need for extensions.

#### **2. Rationale**

This subsection is necessary so that manufacturers can be made aware of Executive Officer's determination of a nonconforming OBD system, be provided with all enforcement test results and other information used as part of the determination and provide means for manufacturers to contest a determination and the methods and time frame by which that is to take place. This subsection is also necessary to specify when extensions may be granted in cases where manufacturers need more time to gather needed information to contest a determination.

### **Subsection (c)(1)**

#### **1. Purpose**

The purpose of this subsection is to specify the notification period for voluntary OBD-related recalls.

## **2. Rationale**

If manufacturers opt to initiate a voluntary OBD-related recall, it is important for manufacturers to indicate this recall to the Executive Officer in a timely manner. The timeframe chosen was based on dates in other vehicle regulations CARB has to maintain consistency and achieves the right balance between the regulated industry's need for time and CARB's need to ensure the regulatory requirements are complied with.

### **Subsection (c)(2)**

#### **1. Purpose**

The purpose of this subsection is to specify when a manufacturer may elect to conduct an influenced OBD-related recall of all motorcycles within a motorcycle enforcement group deemed nonconforming by the Executive Officer's conducted enforcement testing, as well as to specify that the Executive Officer can order a mandatory recall if the manufacturer does not elect to conduct an influenced OBD-related recall.

#### **2. Rationale**

This subsection is necessary to specify the manufacturers obligations regarding influenced OBD-related recalls and to specify that manufacturers must submit a plan to the Executive Officer for approval. It is also necessary to provide the structure for the Executive Officer to order mandatory influenced OBD-related recalls.

### **Subsection (c)(3)**

#### **1. Purpose**

The purpose of this subsection is to specify the conditions under which the Executive Officer may or may not order a mandatory OBD-related recall based on results of OBD enforcement testing which indicate an OBD system is nonconforming, and to specify that motorcycle enforcement groups not subject to mandatory recall may still be subject to other forms of remedial action.

#### **2. Rationale**

This subsection is necessary to provide authority to the Executive Officer to order mandatory OBD-related recall of motorcycle enforcement groups based on test results from OBD enforcement testing and indicate under what conditions the Executive Officer may order an OBD-related recall.

## **Subsection (c)(4)**

### **1. Purpose**

The purpose of this section is to specify the conditions for other ordered remedial action by the Executive Officer in cases of nonconforming OBD system determination. Many factors are to be considered by the Executive Officer when making the determination for OBD-related remedial action.

### **2. Rationale**

This section is necessary to spell out what criteria the Executive Officer may take into consideration in determining OBD-related remedial action as a result of nonconformance determinations made by the Executive Officer during enforcement testing.

## **Subsection (c)(5)**

### **1. Purpose**

The purpose of this section is to notify manufacturers that the Executive Officer may seek penalties for production of motorcycles otherwise failing to be equipped with an OBD system that have been certified.

### **2. Rationale**

This subsection is necessary to provide manufacturers with notice that noncompliance may result in penalties, which is necessary for fairness to the regulated community.

## **Subsection (c)(6)**

### **1. Purpose**

The purpose of this subsection is to specify the Executive Officer's obligations in regards to notifying the manufacturer of any ordered remedial action, what must be included in the notification, and whether or not any monetary penalties are to be assessed.

### **2. Rationale**

This subsection is necessary to ensure the manufacturer is made aware of any ordered remedial action in a timely manner, that the notification includes sufficient information and documentation of the specific remedial action to be taken, information on which motorcycles are affected, and other relevant information.

## **Subsection (c)(7)**

## **1. Purpose**

The purpose of this subsection is to specify the availability of a public hearing as an option to contest remedial actions and provide specifics on timeframe to request a public hearing and what procedures are to be followed.

## **2. Rationale**

This subsection is necessary to indicate to manufacturers that a public hearing is an option to contest remedial action and use this as a means to state their case for why the ordered remedial action is unwarranted. The 45 and 30 day timeframes were chosen as appropriate timeframes because it provides sufficient time for the manufacturer to submit its request for a hearing (45 days) and submit the required remedial action plan (30 days) while balancing the need for finality of the decisions. It also is necessary to be consistent with other CARB regulations.

### **Subsection (d)(1)**

#### **1. Purpose**

The purpose of this subsection is to specify manufacturers responsibilities in regards to what must be included in remedial action plans and under what conditions remedial action plans may be approved, as well as what the Executive Officer must include in their notification to manufacturers in the event their remedial action plan has not been approved.

#### **2. Rationale**

This subsection is necessary so that manufacturers know exactly what is expected of them in regards to developing a remedial action plan, who and where to submit the plan to, how to get such a plan approved, and what to expect in the event their plan is not approved.

### **Subsection (d)(2)**

#### **1. Purpose**

The purpose of this subsection is to specify the conditions for eligibility for remedial action based on the conditions of a specific motorcycle included in the enforcement testing.

#### **2. Rationale**

This subsection is necessary to indicate to manufacturers that they may not condition a motorcycle owner's eligibility for remedial action on the proper maintenance or use of the motorcycle, and that the manufacturer shall not be obligated to repair



modified or altered components such that remedial action cannot be performed without additional cost.

### **Subsection (d)(3)**

#### **1. Purpose**

The purpose of this subsection is to specify the conditions for notifying motorcycle owners of an ordered remedial order. It specifies methods for finding and notifying owners and what must be included in the notification.

#### **2. Rationale**

This subsection is necessary to provide manufacturers with the information they must include in their notifications to owners regarding remedial action, to encourage owners to bring their motorcycles in to repair the nonconforming OBD systems.

### **Subsection (d)(4)**

#### **1. Purpose**

The purpose of this subsection is to specify that a label must be affixed to motorcycles which have been repaired as a result of remedial action, as well as what must be included on the label.

#### **2. Rationale**

This subsection is necessary to ensure that once a motorcycle has been repaired, it is evident to the owner of the motorcycle, future owners of the motorcycle, as well as repair shops that the motorcycle has had the required repairs performed.

### **Subsection (d)(5)**

#### **1. Purpose**

The purpose of this subsection is to specify that a proof of performance of remedial action certificate is to be provided to motorcycle owners who have had a remedial action performed on their motorcycle and what format it must be provided in.

#### **2. Rationale**

This subsection is necessary to ensure that once an owner has brought their motorcycle in and had repairs performed as part of a remedial action, they receive a certificate so they can show proof that the required repairs have been performed.

### **Subsection (d)(6)**

#### **1. Purpose**

The purpose of this subsection is to specify the manufacturer's recordkeeping and reporting requirements regarding remedial action, including what records must be kept, details on how progress in remedial action campaigns should be reported, which motorcycles are subject to the remedial action, along with other relevant information.

## **2. Rationale**

This subsection is necessary to provide exactly what is expected of manufacturers in terms of recordkeeping and reporting relevant information regarding remedial action campaigns.

### **Subsection (d)(7)**

#### **1. Purpose**

The purpose of this subsection is to specify that the Executive Officer may extend remedial action deadlines if the manufacturer has a good cause for an extension.

#### **2. Rationale**

In some cases the deadlines set may not be enough time for manufacturers to meet their obligations regarding remedial action and therefore may need an extension, this subsection allows the Executive Officer to offer such extensions.

### **Subsection (e)**

#### **1. Purpose**

The purpose of this subsection is to specify that additional penalties may be assessed if manufacturers fail to comply with the requirements of subsection (d)

#### **2. Rationale**

It is necessary to provide notice to manufacturers that if they fail to comply with the required ordered remedial action, further penalties will be assessed.

### **Subsection (f)**

#### **1. Purpose**

The purpose of this subsection is to provide for severability in the event that any provision of this section is held to be invalid or unenforceable, the remainder of the article remains in full force and effect.

#### **2. Rationale**

This subsection is necessary to preserve the overall intent of what the proposed regulation is set to achieve and that each provision remains in effect in the event any one of the provisions is held to be invalid.