

**DOCKETED**

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*Comment Received From: Larry Engelbrecht  
Submitted On: 7/7/2020  
Docket Number: 19-ALT-01*

**Larry Engelbrecht Comment Addressing Discussion Question #2,  
specifically “to create jobs quickly”** □

*Additional submitted attachment is included below.*

Larry Engelbrecht, Educational Consultant

Comment Addressing Discussion Question #2, specifically: "...to create jobs quickly..."

Excerpt from the third from the bottom paragraph on page 63 in the:

Lead Commissioner Report  
2020–2023 Investment

Plan Update for the Clean Transportation Program Report, the second sentence:

*"A next step will be to strategically evaluate innovations in training that can lead to higher wages through Automotive Service Excellence (ASE) certifications for automotive and truck ZEV technologies at the high schools."*

I recommend adding "*and community colleges*" at the end of the sentence since ASE certification is closely aligned between high school and community college Auto and Truck Programs.

What job postings are requiring

Even though high school and community college Auto/Truck Programs frequently issue certificates and even degrees, Auto and Truck technician job postings overwhelmingly specify ASE Professional Technician certification. It is important to understand that the industry standard for ASE certification is Professional Technician certification as opposed to Student or Entry Level ASE certification, frequently offered at high schools.

Therefore, to best address "*...training that can lead to higher wages through Automotive Service Excellence (ASE) certifications for automotive and truck ZEV technologies at the high school through college levels...*", I will break this down and address this phrase by phrase:

*"...training that can lead to higher wages..."*

Higher wages

Entry-level auto technician jobs at dealerships are frequently performed in "quick service" bays, typically entry level minimum wage tasks such as oil and filter changes with limited opportunities to be promoted without additional training, typically not offered by the dealership. Required tools are minimal, provided by the employer.

Per section 9. (B) of: [https://www.dir.ca.gov/iwc/Wage\\_orders\\_January2001/IWCArticle9.html](https://www.dir.ca.gov/iwc/Wage_orders_January2001/IWCArticle9.html) : (B) When tools or equipment are required by the employer or are necessary to the performance of a job, such tools and equipment shall be provided and maintained by the employer, except that an employee whose wages are at least two (2) times the minimum wage provided herein may be required to provide and maintain hand tools and equipment customarily required by the trade or craft. As an example, effective July 1, 2020, the minimum wage in the city of Los Angeles, for businesses exceeding 25 employees (such as car dealerships), the minimum wage is \$15.00/hour, making auto technicians providing their own tools earning \$62,400 per year.

Higher paying service positions require bumper-to-bumper knowledge, such as that offered by 540-hour ASE-accredited Auto MLR (Maintenance and Light Repair) programs, typically offered at the high school level. These skills are included as part of the 1200-hour ASE-accredited Auto MAST (Master Auto Service Technician) programs, typically offered at the community college level. Technicians at these levels are required to supply their own tools, thereby qualifying for double the minimum wage.

There are two ways to achieve double minimum wage for an Auto Technician: One is to complete the 540-hour ASE Maintenance and Light Repair Program, pass the ASE Professional Technician G1 certification test, and meet the experience requirement. According to ASE, tasks requiring Maintenance and Light Repair make up 70% of dealer service department work, and require “bumper to bumper” training on all the vehicle systems.

The second way to achieve double minimum wage for an Auto Technician, with a greater chance of earning double minimum wage, is to complete the 1200-hour ASE-accredited Auto Program, preparing the technician to pass the eight ASE Professional Technician tests (A1, A2, A3, A4, A5, A6, A7, and A8) required to achieve ASE Master Auto Technician status upon meeting those experience requirements as well.

### Regarding Apprenticeships and Workforce Development

When compared to a highly effective high school and community college pathway, state approved apprenticeships are problematic for several reasons: From the California Automotive Apprenticeship page at: [http://www.autoapprenticeship.com/automotive\\_mechanic\\_technician.html](http://www.autoapprenticeship.com/automotive_mechanic_technician.html)

“...Automotive Mechanic/Technician is a four (4) year, 8000 hour apprenticeship program...”  
 “...A minimum of 144 school attendance hours a year in related training subjects. Indentured apprentices are assigned to local community colleges in evening classes, two nights a week...”  
 “...Indentured apprentices are assigned to local community colleges in evening classes, two nights a week...”

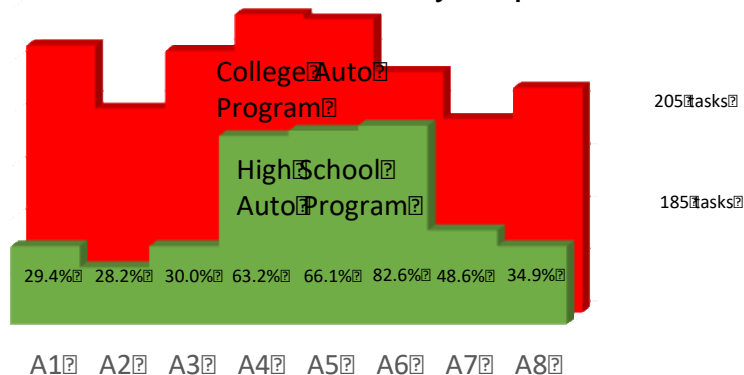
Additionally, section 9. (B) of: [https://www.dir.ca.gov/iwc/Wage\\_orders\\_January2001/IWCArticle9.html](https://www.dir.ca.gov/iwc/Wage_orders_January2001/IWCArticle9.html) also states, regarding double minimum wages: *This subsection (B) shall not apply to apprentices regularly indentured under the State Division of Apprenticeship Standards.*

The state apprenticeship model requires a student to work for four years, be ineligible to earn double minimum wage for the duration of apprenticeship, and emerge after four years with enough hours to only achieve ASE MLR certification (G1). And this is only if the community college Auto or Truck curriculum is optimized to offer MLR or IMMR pathway respectively.

### Creating Highly Effective Pathways Between High Schools and Colleges

Community colleges in California have Auto curriculums that do not separate MLR tasks from the MAST curriculum, resulting in “...unnecessary duplication of instruction...” (ASE Auto Standard 7.16). Therefore, students completing MLR training unnecessarily repeat 47.4% of tasks overall in MAST programs, exceeding 60% – 80% in several high demand areas.

### High School Tasks Unnecessarily Repeated in College



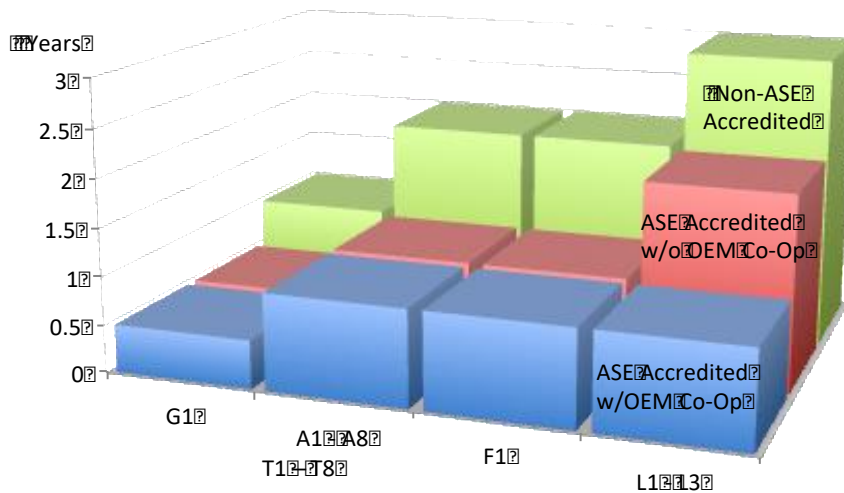
“...through Automotive Service Excellence (ASE) certifications...”

From: [https://www.ase.com/MediaLibrary/Images/PDF%20folder/ASE\\_Work\\_Experience\\_Form.pdf](https://www.ase.com/MediaLibrary/Images/PDF%20folder/ASE_Work_Experience_Form.pdf)

Category	Description	Minimum amount of experience	Required for these Tests
Repair Technician	Hands-on experience maintaining, servicing, and/or repairing light-duty or heavy-duty motor vehicles.	1 year	G1
		2 years	A1-A9, B2-B5, E1-E3, F1, H1-H8, S1-S7, T1-T8, and X1
		3 years	L1, L2, and L3
Service Consultant	Hands-on experience as an automotive service writer/consultant or service manager.	2 years	C1
Parts Specialist	Hands-on experience as a parts counterperson or managing a wholesale or retail parts store or in-house parts department.	2 years	P1, P2, and P4
Collision Damage Estimator	Hands-on experience as an automotive collision damage estimator/adjuster.	2 years	B6

Formal Education / Training	Credit toward 1 year Repair Technician requirement	Credit toward 2 year Repair Technician requirement	Credit toward 3 year Repair Technician requirement
1) Complete any NATEF-Accredited Program – Auto, M/H Truck or Collision-Refinish, including MLR, AST, MAST and all other current or grandfathered NATEF standards	6 months	1 year	1 year
-or- 2) Complete a NATEF-Accredited OEM-Sponsored Co-op Program	1 year	2 years	2 years
-or- 3) Pass 3 or more different ASE Student Certification Tests	6 months	1 year	1 year
-or- 4) All other training: 2 months of full-time training (or 200 program hours) equals 1 month credit	Up to 6 months	Up to 1 year	Up to 1 year

## How ASE Program Accreditation Affects Professional Technician Certification Work Experience Requirements



“...for automotive...”

For highly effective student and program outcomes, high school Auto Programs need to:

- be an ASE-accredited 540-hour MLR Auto Program,
- develop effective pathway agreements with area community colleges through dual enrollment, dual articulation, concurrent enrollment, etc.

Community college Auto Programs need to:

- be an ASE-accredited 1200-hour MAST Auto Program
- have curriculum align with area high school MLR courses
- develop effective pathway agreements with area feeder high schools through dual enrollment, dual articulation, concurrent enrollment, etc.

“... and truck...”

Similarly, for highly effective student and program outcomes, for Truck Programs,

High school Truck Programs need to:

- be an ASE-accredited 540-hour IMMR Program,
- develop effective pathway agreements with area community colleges through dual enrollment, dual articulation, concurrent enrollment, etc.

Community college Truck Programs need to:

- be an ASE-accredited 1040-hour MTST Truck Program
- have curriculum align with area high school IMMR courses
- develop effective pathway agreements with area feeder high schools through dual enrollment, dual articulation, concurrent enrollment, etc.

“...ZEV technologies...”

Community college Auto Programs need to:

- be an OEM-sponsored Co-op program
- offer courses to prepare students to pass ASE L1 and L3 Advanced Level certification tests

Community college Truck Programs need to:

- be an OEM-sponsored Co-op program
- offer courses to prepare students to pass ASE L2 and L3 Advanced Level certification tests

“...at the high school *through college levels.*”

### ASE Program Accreditation and Effective Pathways between High Schools and Community Colleges

A pathway continuing from high school through community college without unnecessary duplication of instruction at the community college level, and class scheduling that accommodates working students to encourage program completion, is critical to program completer effectiveness.

Some examples of highly effective high school and college pathways are:

High schools with 3 year (540-hour) ASE-accredited MLR Auto Programs prepare students to pass ASE Professional Technician G1 certification test by high school graduation. Students entering a community college

with ASE-accredited Auto Program curriculums split into Maintenance and Light Repair (MLR) and Master Auto Technician (MAT) pathways who completed the MLR pathway in high school are prepared to pass the ASE Master Auto Technician tests and ASE Advanced Level Advanced Engine Performance (L1) and Hybrid/Electric Vehicle (L3) tests by the end of the second semester.

High schools with a specifically designed 4-year academy (720-hour) ASE-accredited MLR Auto Programs prepare students to pass ASE Professional Technician G1, A4, A5, and A6 certification tests by high school graduation. Community colleges with ASE-accredited Auto Program curriculums split into Maintenance and Light Repair (MLR) and Master Auto Technician (MAT) pathways prepare students to pass ASE Professional Technician A1, A2, A3, A7, and A8 certification tests by the end of the first semester (thereby completing Master Auto Technician status upon meeting Experience Requirements) and pass ASE Advanced Level Advanced Engine Performance (L1) and Hybrid/Electric Vehicle (L3) tests by the end of the second semester (thereby completing Advanced Level status upon meeting Experience Requirements).

Community colleges with ASE-accredited Auto Program curriculums split into Maintenance and Light Repair (MLR) and Master Auto Technician (MAT) pathways prepare students with no prior Auto training to pass ASE Professional Technician Certification G1 (MLR) test by the end of the first semester.

Community colleges with ASE-accredited Auto Program curriculums split into Maintenance and Light Repair (MLR) and Master Auto Technician (MAT) pathways prepare students who completed the MLR pathway in the first semester to pass ASE Master Auto Technician tests by the end of the second semester.

Community colleges with ASE-accredited Auto Program curriculums split into Maintenance and Light Repair (MLR) and Master Auto Technician (MAT) pathways prepare students who completed the MLR pathway in the first semester to pass ASE Master Auto Technician tests and ASE Advanced Level tests by the end of the second semester.

Community colleges with ASE-accredited Auto Program curriculums split into Maintenance and Light Repair (MLR) and Master Auto Technician (MAT) pathways prepare students who completed the MLR pathway in high school to pass ASE Master Auto Technician tests and ASE Advanced Level tests by the end of the second semester.

#### Summary: Prioritizing Educational Funding

There are additional highly effective pathway scenarios for Truck as well as Auto. Community colleges that do not have both ASE-accredited and highly effective curriculum pathways that eliminate unnecessary duplication of instruction, require students to complete a minimum of three or four semesters, may require students to have two years experience to obtain both G1 and Master Auto Technician status, and as much as three years experience to obtain Advanced Level certifications such as Hybrid/Electric Vehicle. Clearly, the most effective way to achieve “...*training that can lead to higher wages through Automotive Service Excellence (ASE) certifications for automotive and truck ZEV technologies at the high school through college levels...*” is to direct Clean Transportation Program Education and Workforce Development funding to:

1. Support ZEV technology training funding through high school and community college Auto/Truck programs that are currently ASE-accredited, have a highly effective curriculum pathway with ASE-accredited feeder high school Auto/Truck Programs, and have an OEM-sponsored Co-op program, and
2. Support ZEV technology training funding through high schools and community colleges **that demonstrate commitment** to have their Auto/Truck programs ASE-accredited, create a highly effective curriculum pathway with ASE-accredited feeder high school Auto/Truck Programs, and participate in an OEM-sponsored Co-op program.