



Automotive Technology (TOP 0948.00)

November 2022

Prepared by the South Central Coast Center of Excellence for
Labor Market Research

Program Recommendation

This report was compiled by the South Central Coast¹ Center of Excellence to provide regional labor market data for the program recommendation – Automotive Technology. This report can help determine whether there is demand in the local labor market that is not being met by the supply from programs of study (CCC and non-CCC) that align with this occupation group.

Key Findings

- In the South Central Coast region, the number of jobs related to Automotive Technology are expected to decrease for Automotive and Watercraft Service Attendants, increase for Mechanical Engineering Technologists and Technicians, and remain steady for the remaining occupations.
- Automotive Technology is anticipated to experience a **high risk of automation** for Automotive Body and Related Repairers. There was insufficient data to determine the risk of automation for Automotive Engineering Technicians. The three remaining occupations have a **medium risk of automation**.
- In 2021 there were 220 regional completions in programs identified as aligned with Automotive Technology and 595 openings, indicating an **undersupply**.
- Typical entry-level education varies from **no education credential** for Automotive and Watercraft Service Attendants; a **high school diploma or equivalent** for Engine and Other Machine Assemblers & Automotive Body and Related Repairers; a **postsecondary nondegree award** for Automotive Service Technicians and Mechanics; and an **associate's degree** for Automotive Engineering Technicians.
- Completers of Automotive Technology programs from the 2018-2019 academic year in the South Central Coast region had a **median annual wage upon completion of \$30,444**.
- 64% of students are **employed within a year** after completing a program.
- 27% of students **attained a living wage** within a year of completion.
- Completers experienced an average of +66% **change in earnings** after exiting.
- 74% of students were **part-time**, 21% **skill builders**, 48% **first-generation**, and 84% **economically disadvantaged**.

¹ The South Central Coast Region consists of San Luis Obispo County, Santa Barbara County, Ventura County, and the following cities from North Los Angeles County: Canyon Country, Castaic, Lake Hughes, Lancaster, Littlerock, Llano, Newhall, Palmdale, Pearblossom, Santa Clarita, Stevenson Ranch, and Valencia.

Occupation Codes and Descriptions

There are five occupations in the standard occupational classification (SOC) system that were identified as related to Automotive Technology for this analysis. The occupation titles and descriptions, as well as reported job titles, are included in Exhibit 1.

Exhibit 1 – Occupation, Description, and Sample Job Titles

| SOC Code | Title | Description | Sample of Reported Job Titles |
|------------|---|--|--|
| 17-3027.01 | Automotive Engineering Technicians | Assist engineers in determining the practicality of proposed product design changes and plan and carry out tests on experimental test devices or equipment for performance, durability, or efficiency. | Laboratory Technician (Lab Technician), Research Technician |
| 49-3021 | Automotive Body and Related Repairers | Repair and refinish automotive vehicle bodies and straighten vehicle frames. | Auto Body Man, Auto Body Repair Technician (Auto Body Repair Tech), Auto Body Repairman, Automotive Body Technician (Auto Body Tech), Body Man, Body Technician (Body Tech), Collision Repair Technician, Collision Technician, Frame Man, Refinish Technician |
| 49-3023 | Automotive Service Technicians and Mechanics | Diagnose, adjust, repair, or overhaul automotive vehicles. | Automotive Drivability Technician (Auto Drivability Tech), Automotive Mechanic (Auto Mechanic), Automotive Service Technician (Auto Service Tech), Automotive Technician, Diagnostic Technician, Heavy Line Technician, Lubrication Technician (Lube Tech), Mechanic, Quick Service Technician, Service Technician |
| 51-2031 | Engine and Other Machine Assemblers | Construct, assemble, or rebuild machines, such as engines, turbines, and similar equipment used in such industries as construction, extraction, textiles, and paper manufacturing. | Assemblers, Assembly Line Worker, Cell Technician, Engine Assembler, Engine Builder, Field Service Technician, Fitter, Large Engine Assembler, Machine Assembler, Mechanical Assembler |

| SOC Code | Title | Description | Sample of Reported Job Titles |
|----------|---|--|---|
| 53-6031 | Automotive and Watercraft Service Attendants | Service automobiles, buses, trucks, boats, and other automotive or marine vehicles with fuel, lubricants, and accessories. Collect payment for services and supplies. May lubricate vehicle, change motor oil, refill antifreeze, or replace lights or other accessories, such as windshield wiper blades or fan belts. May repair or replace tires. | Attendant, Dock Attendant, Dock Hand, Fuel Attendant, Fuel Dock Attendant, Gas Attendant, Gas Pumper, Marine Fuel Dock Attendant, Service Station Attendant |

Source: O*NET Online

Current and Future Employment

In the South Central Coast region, the number of jobs related to Automotive Technology are expected to decrease for Automotive and Watercraft Service Attendants, increase for Mechanical Engineering Technologists and Technicians, and remain steady for the remaining occupations.

Exhibit 2 – Five-Year Projections for Automotive Technology in the South Central Coast Region

| SOC | Occupation | 2021 Jobs | 2026 Jobs | 2021-2026 Change | 2021-2026 % Change |
|-----------------------------|--|-----------|-----------|------------------|--------------------|
| 17-3027 (for 17-3027.01) | Mechanical Engineering Technologists and Technicians (for Automotive Engineering Technicians) | 206 | 217 | 11 | 5% |
| 49-3021 | Automotive Body and Related Repairers | 693 | 706 | 13 | 2% |
| 49-3023 | Automotive Service Technicians and Mechanics | 4,181 | 4,057 | -124 | -3% |
| 51-2031 | Engine and Other Machine Assemblers | 101 | 97 | -4 | -4% |
| 53-6031 | Automotive and Watercraft Service Attendants | 520 | 493 | -27 | -5% |

Source: Economic Modeling Specialists International (EMSI)

Earnings

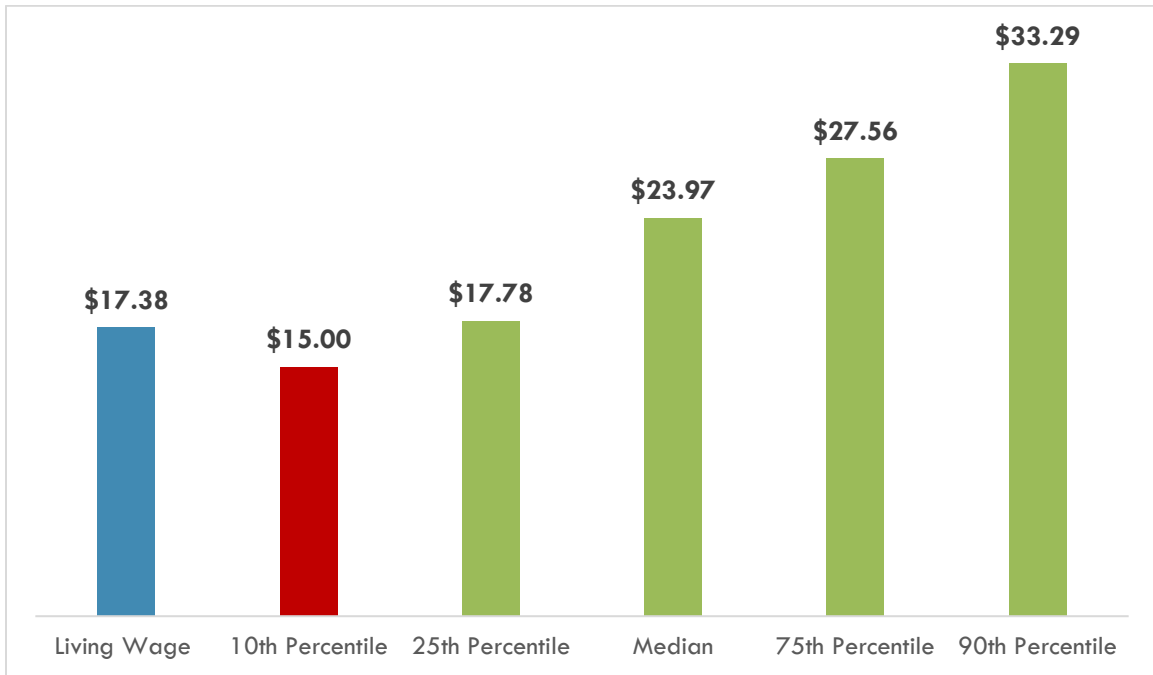
Exhibit 3 contains hourly wages and annual average earnings for these occupations. Entry-level hourly earnings are represented by the 25th percentile of wages, median hourly earnings are represented by the 50th percentile of wages, and experienced hourly earnings are represented by the 75th percentile of wages, demonstrating various levels of employment.

Exhibit 3 – Earnings for Automotive Technology in the South Central Coast Region

| SOC | Occupation | Entry-Level Hourly Earnings | Median Hourly Earnings | Experienced Hourly Earnings |
|-----------------------------|--|-----------------------------|------------------------|-----------------------------|
| 17-3027 (for 17-3027.01) | Mechanical Engineering Technologists and Technicians (for Automotive Engineering Technicians) | \$23.35 | \$34.05 | \$38.22 |
| 49-3021 | Automotive Body and Related Repairers | \$18.76 | \$26.53 | \$29.87 |
| 49-3023 | Automotive Service Technicians and Mechanics | \$15.17 | \$24.16 | \$29.39 |
| 51-2031 | Engine and Other Machine Assemblers | \$17.30 | \$20.44 | \$23.14 |
| 53-6031 | Automotive and Watercraft Service Attendants | \$14.34 | \$14.65 | \$17.16 |

Source: Economic Modeling Specialists International (EMSI)

Exhibit 3b – Earnings for Automotive Technology in the South Central Coast Region



Source: Family Needs Calculator (Living wage is based on Single Adult households with no children); Economic Modeling Specialists International (EMSI)

Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for occupations relevant to the field of study. Employer job postings are consulted to understand who is looking for auto technicians, and what they are looking for in potential candidates. To identify job postings related to Automotive Technology the following standard occupational classifications were used:

| | |
|------------|--|
| 17-3027.01 | Automotive Engineering Technicians |
| 49-3021 | Automotive Body and Related Repairers |
| 49-3023 | Automotive Service Technicians and Mechanics |
| 51-2031 | Engine and Other Machine Assemblers |
| 53-6031 | Automotive and Watercraft Service Attendants |

Top Occupations

In 2021, there were 2,007 employer postings for the occupations related to Automotive Technology.

Exhibit 4 – Top Occupations by Job Postings

| SOC Code | Occupation | Job Postings, Full Year 2021 |
|------------|---|------------------------------|
| 49-3023 | Automotive Service Technicians and Mechanics | 1,532 |
| 49-3021 | Automotive Body and Related Repairers | 360 |
| 53-6031 | Automotive and Watercraft Service Attendants | 102 |
| 51-2031 | Engine and Other Machine Assemblers | 13 |
| 17-3027.01 | Automotive Engineering Technicians | 0 |

Source: Labor Insight/Jobs (Burning Glass)

Exhibit 4b – Top Occupations and Risk of Automation

| SOC Code | Occupation | Risk of Automation |
|------------|---|--------------------|
| 49-3023 | Automotive Service Technicians and Mechanics | Medium |
| 49-3021 | Automotive Body and Related Repairers | High |
| 53-6031 | Automotive and Watercraft Service Attendants | Medium |
| 51-2031 | Engine and Other Machine Assemblers | Medium |
| 17-3027.01 | Automotive Engineering Technicians | N/A |

Source: Labor Insight/Jobs (Burning Glass)

Top Titles

The top job titles for employers posting ads for jobs related to Automotive Technology are listed in Exhibit 5. Automotive Technician is mentioned as the job title in 5% of all relevant job postings (94 postings).

Exhibit 5 – Job Titles

| Title | Job Postings, Full Year 2021 |
|-----------------------|---|
| Automotive Technician | 94 |
| Auto Body Technician | 87 |
| Lube Technician | 49 |
| Automotive Mechanic | 44 |
| Service Technician | 31 |

Source: Labor Insight/Jobs (Burning Glass)

Top Employers

Exhibit 6 lists the major employers hiring professionals in the Automotive Technology field. The top employer posting job ads was Caliber Collision. The top worksite cities for these occupations were Oxnard, Santa Clarita, Thousand Oaks, Ventura, and Lancaster.

Exhibit 6 – Top Employers (n=1,411)

| Employer | Job Postings, Full Year 2021 |
|-----------------------|---|
| Caliber Collision | 87 |
| Carmax | 54 |
| Chrysler | 46 |
| Pep Boys | 37 |
| Bridgestone/Firestone | 25 |

Source: Labor Insight/Jobs (Burning Glass)

Skills

The tables in Exhibit 7 list employers' most commonly requested skills in job postings related to Automotive Technology. Repair is the most sought-after specialized skill for employers, followed by Auto Repair and Customer Service. Communication Skills, Physical Abilities, and Teamwork/Collaboration were the most requested baseline skills. Microsoft Excel, Microsoft Office, and Microsoft Word were the most commonly requested software and programming skills.

Exhibit 7 – Specialized Skills (n= 8,412)

| Skills | Job Postings, Full Year 2021 |
|--|---------------------------------|
| Repair | 1,110 |
| Auto Repair | 703 |
| Customer Service | 345 |
| Automotive Services Industry Knowledge | 233 |
| Scheduling | 159 |
| Customer Contact | 151 |
| Cleaning | 141 |
| Power Tools | 125 |
| Welding | 108 |
| Hand Tools | 105 |
| Sales | 98 |
| Predictive/Preventative Maintenance | 96 |
| Motor Vehicle Operation | 96 |
| Engine Repair | 93 |
| Vehicle Maintenance | 91 |

Source: Labor Insight/Jobs (Burning Glass)

Exhibit 7b – Baseline Skills (n= 3,697)

| Skills | Job Postings, Full Year 2021 |
|--------------------------|---|
| Communication Skills | 332 |
| Physical Abilities | 327 |
| Teamwork/Collaboration | 311 |
| Detail-Oriented | 269 |
| Organizational Skills | 268 |
| Troubleshooting | 158 |
| Problem Solving | 147 |
| Computer Literacy | 133 |
| Preventative Maintenance | 119 |
| Multi-Tasking | 115 |

Source: Labor Insight/Jobs (Burning Glass)

Exhibit 7c – Software and Programming Skills (n= 463)

| Skills | Job Postings, Full Year 2021 |
|----------------------|---|
| Microsoft Excel | 107 |
| Microsoft Office | 70 |
| Microsoft Word | 43 |
| Linux | 33 |
| Software Testing | 32 |
| SCADA | 32 |
| Microsoft PowerPoint | 27 |
| Struts | 20 |
| Microsoft Outlook | 12 |
| Systems Analysis | 11 |

Source: Labor Insight/Jobs (Burning Glass)

The table below lists the skill clusters most in demand for Automotive Technology occupations.

Exhibit 7d – Skill Clusters in Demand (n=6,019)

| Skill Cluster | Job Postings, Full Year 2021 |
|--|---|
| Maintenance, Repair, and Installation: Vehicle Repair and Maintenance | 1,105 |
| Customer and Client Support: Basic Customer Service | 456 |
| Industry Knowledge: Automotive Repair Industry Knowledge | 234 |
| Human Resources: Occupational Health and Safety | 166 |
| Maintenance, Repair, and Installation: Hand Tools | 162 |
| Administration: Scheduling | 159 |
| Maintenance, Repair, and Installation: Equipment Repair and Maintenance | 151 |
| Maintenance, Repair, and Installation: Power Tools | 150 |
| Administration: General and Administrative Clerical Tasks | 141 |
| Supply Chain and Logistics: Transportation Operations | 136 |

Source: Labor Insight/Jobs (Burning Glass)

Industry Concentration

Exhibit 8 shows the industries with the most Automotive Technology postings in the South Central Coast region. Note: 32% of records have been excluded because they do not include an industry. As a result, the chart below may not be representative of the full sample.

Exhibit 8 – Industries Employing the Most in the Automotive Technology Field, 2021

| Industry | Occupation Group Jobs in Industry | % of Occupation Group in Industry |
|---|--|--|
| Other Services (Except Public Administration) | 575 | 42% |
| Retail Trade | 269 | 20% |
| Manufacturing | 206 | 15% |
| Transportation and Warehousing | 59 | 4% |
| Public Administration | 47 | 4% |

Certifications

Exhibit 9 lists the most in-demand certifications in the Automotive Technology field. The top requested certification in job postings was Driver's License.

Exhibit 9 – Certifications (n= 1,426)

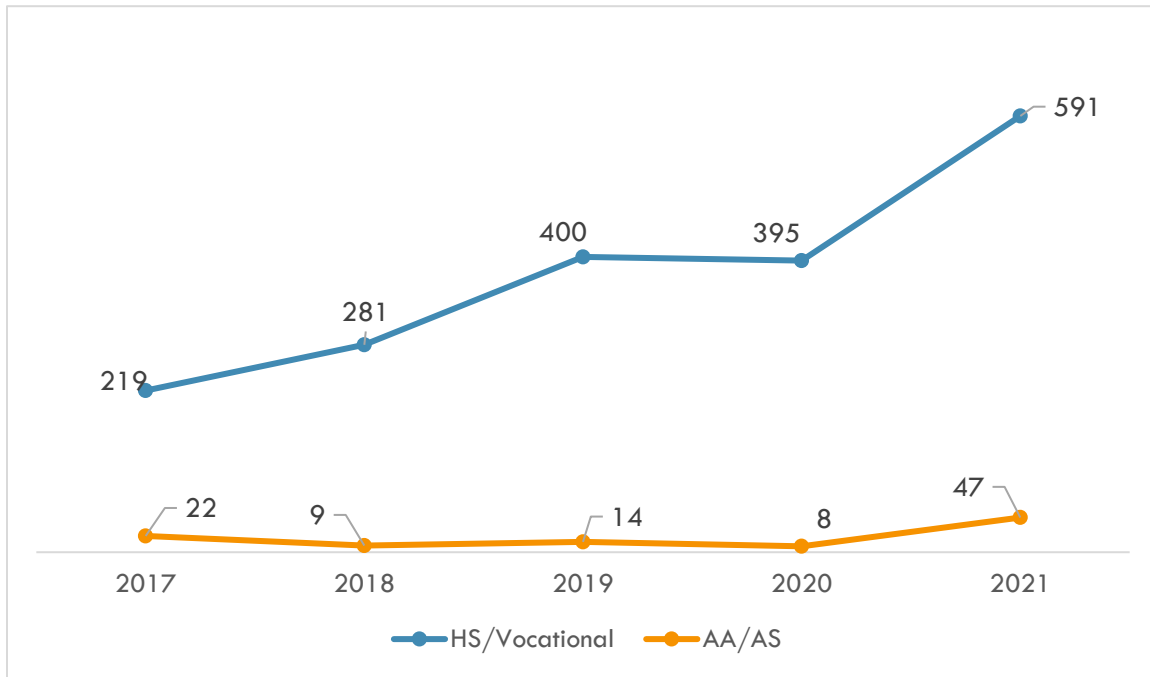
| Certifications | Job Postings, Full Year 2021 |
|---|---|
| Driver's License | 847 |
| Automotive Service Excellence (ASE) Certification | 265 |
| Security Clearance | 53 |
| CompTIA Security+ | 32 |
| Certified Information Systems Security Professional (CISSP) | 32 |

Source: Labor Insight/Jobs (Burning Glass)

Job Postings - Minimum Educational Attainment Over Time

Exhibit 10 displays the change in job advertisements for Automotive Technology over the last five years, according to the minimum advertised education. In 2021, there were 638 total job ads posted with a minimum advertised education, with 591 of them requiring a high school diploma or equivalent.

Exhibit 10 – Educational Demand, Minimum Advertised



Source: Labor Insight / Jobs (Burning Glass)

Job Postings – Proportion of Job Postings by Minimum Educational Attainment Required

To gauge employer preference for candidates with particular education levels, the proportion of job postings by minimum advertised education appears in Exhibit 11. Employers posting job ads for Automotive Technology have frequently sought candidates with a high school diploma or vocational training.

Exhibit 11 – Occupational Demand by Education, Minimum Advertised

| Minimum Education Requirement | 2017 | 2018 | 2019 | 2020 | 2021 |
|----------------------------------|------|------|------|------|------|
| HS Diploma / Vocational Training | 91% | 97% | 97% | 98% | 93% |
| Associate Degree | 9% | 3% | 3% | 2% | 7% |

Source: Labor Insight/Jobs (Burning Glass)

Education and Training

Exhibit 12 shows the typical entry-level education requirement for the occupations of interest, along with the typical on-the-job training needed to attain competency in the occupation.

Exhibit 12 – Education and Training Requirements

| SOC | Occupation | Typical entry-level education | Typical on-the-job training |
|------------|---|--------------------------------------|------------------------------------|
| 17-3027.01 | Automotive Engineering Technicians | Associate's degree | None |
| 49-3021 | Automotive Body and Related Repairers | High school diploma or equivalent | Long-term on-the-job training |
| 49-3023 | Automotive Service Technicians and Mechanics | Postsecondary nondegree award | Short-term on-the-job training |
| 51-2031 | Engine and Other Machine Assemblers | High school diploma or equivalent | Moderate-term on-the-job training |
| 53-6031 | Automotive and Watercraft Service Attendants | No formal education credential | Short-term on-the-job training |

Source: Bureau of Labor Statistics Employment Projections (Educational Attainment)

Regional Completions and Openings

There were 220 regional completions (2021) and 595 regional openings (2021) in the South Central Coast region for programs related to the occupations in this report.

Exhibit 13 – Completions and Openings

| | | |
|---|---|--------------------------------------|
| 9 Regional Institutions had Related Programs (2021) | 220 Regional Completions (2021) | 595 Annual Openings (2021) |
|---|---|--------------------------------------|

Source: Economic Modeling Specialists International (EMSI)

Related Programs

| CIP Code | Program | Completions (2020) |
|----------|---|--------------------|
| 47.0604 | Automobile/Automotive Mechanics Technology/Technician | 167 |
| 47.0603 | Autobody/Collision and Repair Technology/Technician | 23 |
| 47.0605 | Diesel Mechanics Technology/Technicians | 23 |
| 15.0000 | Engineering Technologies/Technicians, General | 6 |
| 15.9999 | Engineering/Engineering-Related Technologies/Technicians, Other | 1 |

Source: Economic Modeling Specialists International (EMSI)

CCC and Non-CCC Awards

Exhibit 14 lists the number of completers from programs related to Automotive Technology in the South Central Coast region.

Exhibit 14 – CCC and Non-CCC Awards the South Central Coast, 2021

| CCC Programs | Completers |
|----------------------------------|------------|
| Oxnard College | 81 |
| Ventura College | 48 |
| Allan Hancock College | 40 |
| Cuesta College | 26 |
| Santa Barbara City College | 11 |
| College of the Canyons | 6 |
| Antelope Valley College | 4 |
| Moorpark College | 4 |
| Non-CCC Programs | Completers |
| ITT Technical Institute - Oxnard | 0 |

Source: Economic Modeling Specialists International (EMSI)

Student Outcomes

The CTE LaunchBoard provides student outcome data on the effectiveness of CTE programs. The following student outcome information was collected from exiters of the regional Automotive Technology Programs (TOP: 0948.00) for the 2019-2020 academic year.

- Completers of Automotive Technology programs from the 2018-2019 academic year in the South Central Coast region had a **median annual wage upon completion of \$30,444**.
- 64% of students are **employed within a year** after completing a program.
- 27% of students **attained a living wage** within a year of completion.
- Completers experienced an average of +66% **change in earnings** after exiting.
- 74% of students were **part-time**, 21% **skill builders**, 48% **first-generation**, and 84% **economically disadvantaged**.

Sources

O*Net Online, Labor Insight/Jobs (Burning Glass), Economic Modeling Specialists International (EMSI), MIT Living Wage Calculator, Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, Statewide CTE Outcomes Survey, Employment Development Department Unemployment Insurance Dataset

Notes

Data included in this analysis represent the labor market demand for relevant positions most closely related to Automotive Technology. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study and can signal demand and show what employers are looking for in potential employees, but is not a perfect measure of the quantity of open positions. All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.