Automotive Collision Repair & Painting
Program Review – 2019

1. Overview of the Program

A. **Program Description.** The Automotive Collision Repair and Painting (ACRP) program prepares students for employment in the field and provides employment upgrade opportunities for currently employed technicians. By completing the degree requirements, students will gain proficiency in industry repair standards, vehicle construction and parts identification, tool identification and safe use, damage estimating, frame repair, automotive welding, body repair and panel alignment, and vehicle refinishing. Completing the ACRP certificate requirements prepares students for employment in the fields of automotive insurance investigation, vehicle accident reconstruction, automotive collision repair or automotive refinishing.

Department Highlights:

- ACRP was unofficially voted 2nd best college auto collision repair program in Los Angeles/Orange County area by the Collision Repair Education Foundation (CREF)
- ACRP now offers Inter-Industry Conference on Auto Collision Repair (I-CAR) and Automotive Service Excellence (ASE) industry certifications at no charge for students.
- ACRP has received over $205,000 worth of donations-in-kind since 2015.
- ACRP success and retention rates are strong and rising: average 80.85% success and 89.77% retention for 2014-18 academic years.
- Limited supply, large demand: ACRP is one of only five remaining Southern California community colleges (six total training centers) to offer auto collision repair classes. Over 200 collision repair shops exist within a 10-mile radius of ECC, and over 1100 repair shops exist in Los Angeles County.

ACRP 'Big Goals' for the near future:

- Industry Partnerships and Student Job Placement
  - Mass marketing campaign to local shops to populate new Warrior Jobs Jobspeaker.com website and create partnerships for student and graduate opportunities.
  - Work with the new Career Education center to boost student job placement and services as well as alumni tracking.

- Industry Certifications for Students

- Expand I-CAR certification to include steel, aluminum and structural steel welding.
- Expand non-structural repair and refinishing certifications to ProLevel 3.
- Target existing technicians for skills update training
- Create online-only classes for I-CAR certification in English and Spanish.
- Continue to work toward creating and promoting a contextualized transfer-level math class for the trades.

- Reputation Building
  - Create annual multi-campus student car show/industry job fair/media event
  - Participate in student build-off projects and contests
  - Participate in SkillsUSA competitions
  - Market ACRP to high school students and educate their parents about automotive career opportunities and wages

B. **Degrees/Certificates.** The ACRP program offers one Associate of Science Degree, two Certificates of Achievement and three Certificates of Accomplishment. In the past two years, ACRP has been approved to offer industry certifications and training through I-CAR and ASE as well. These organizations strive to differentiate collision repair shop quality based on properly trained and up-to-date technicians. Graduates obtaining these industry-optional certifications add great value to their resume and future employers.

	Associate of Science Degree Automotive Collision Repair and Painting	**60 units** 20 ACRP, 20 GE, 20 elective
	Certificates of Achievement Automotive Collision Repair Automotive Refinishing	**24 units each** ACRP only
	Certificates of Accomplishment Collision Damage Estimating Automotive Accident Reconstruction Automotive Collison Investigation	**6 units each** ACRP only
	Industry Certifications Inter-Industry Conference on Auto Collision Repair (I-CAR)	**Full-Fledged Certification** Online training and certification tests
	Non-Structural Repair, ProLevel 1 Non-Structural Repair, ProLevel 2 Refinishing, ProLevel 1 Refinishing, ProLevel 2 Estimating, ProLevel 1 Steel Welding, ProLevel 1 Aluminum Welding, ProLevel 1	29 hours 9 hours 17 hours 8 hours 35 hours 18 hours 15 hours

	Industry Certifications	Student Level Certification
	Automotive Service Excellence	
	Automotive Refinishing (B2)	Pass/fail written test
	Non-Structural Repair (B3)	Pass/fail written test
	Structural Repair (B4)	Pass/fail written test
	Mechanical Systems (B5)	Pass/fail written test
	Damage Estimating (B6)	Pass/fail written test

C. **College Mission.** Student and alumni feedback have proven that ACRP successfully contributes to the College's mission of making a positive difference in people's lives. The following are a few success stories of students who would not be on their current path without ECC and the Auto Collision Repair program:

Franky P. – Franky graduated in 2018 and quickly found work as a body tech trainee at Cerritos Nissan. He credits the I-CAR certifications he earned at El Camino College as the 'foot in the door' he needed to get hired as a graduate with no work experience.

Brian B. – Brian was scouted for employment after taking just two classes in ACRP. He graduated in 2018 and continues to work as a junior body technician at the well-respected Eli's Collision Center in Beverly Hills.

Michele M. – Michele is a current ECC student who is making a big splash in ACRP. She brings an art-and-design background in jewelry and fashion to her new-found obsession with auto repair and painting. In just two semesters she has custom painted her car, three motorcyles, multiple helmets, and is almost done restoring a Datsun 280Z with structural and rust damage. She is shown here with her classmate and fellow 2019 CREF scholarship winner **Rob R.**

Ray A. – Ray is one of very few ACRP students to earn his AS Degree and even fewer who transfer to a 4-year university. He was accepted to Cal State Domiguez Hills for fall semester 2019 and will be studying business as it relates to collision repair.

Roxann T. – It's impossible not to applaud Roxann. She conquered a chemical addiction and graduated in 2019 with certificates in ACRP and Auto Technology despite physical, emotional and financial insecurities. She enrolled in college when her daughter graduated because, "If she can do it, I can do it too." And do it she has! Although she still lives in her SUV, she has won multiple scholarships, endeared herself to lots of new friends and industry contacts, and is currently looking for work in automotive repair.

D. **Strategic Initiatives**.

Strategic Initiative A: Support student learning using a variety of effective instructional methods, educational technologies, and college resources. ACRP emphasizes hands-on learning and problem solving whenever possible, and incorporates lectures, book work, online training, written essays, guest speakers/product demos and field trips into class activities as well.

Strategic Initiative B: Strengthen quality educational and support services to promote and empower student learning, success and self-advocacy. To foster student support, ACRP faculty have gone above and beyond their stated duties when it comes to arriving early, staying late and donating tools, supplies and materials, etc. to make sure students can make progress on their projects and succeed in their classes and career goals. The new Career Education center is an exciting and critically needed addition to ECC's student support programs.

Strategic Initiative C: Advance an effective process of collaboration and collegial consultation conducted with integrity and respect to inform and strengthen decision-making. ACRP is eager and willing to collaborate with other departments such as Auto Technology, Welding, Robotics, Machine Tool Technology, Business, Math, Engineering, and Fine Art to expose students not only to collision repair and painting but the wide, wide variety of tangent careers available to people interested in all things automotive, from initial design to product prototyping and manufacturing to business management.

Strategic Initiative D: Develop and enhance partnerships with schools, colleges, universities, businesses, and community-based organizations to respond to the educational, workforce training, and economic development needs of the community. Advisory Committee members and other corporate donors have generously donated thousands of dollars' worth of real-world training materials and supplies for student use. Thanks in part to State Farm Insurance data, ACRP has identified over 900 collision

repair shops in the Los Angeles area from Long Beach to Glendale, as well as contact data for over 100 high schools with automotive programs in Los Angeles and Orange Counties. ACRP intends to use this data reach out to and collaborate with local shop owners, technicians, potential students and their parents to increase the number of students coming into ACRP and the opportunities available to exiting graduates. These partnerships will start to put in place ACRP's plans to integrate college courses with industry certification training and job placement as well as build a network of knowledgeable advisors.

Strategic Initiative E: Strengthen processes, programs, and services through the effective and efficient use of assessment, program review, planning, and resource allocation. While ACRP is driven by industry to look forward, ECC requires self-evaluation, so the department is eagerly anticipating a system of automated integration between SLO assessment, curriculum updates, program review, program planning and budgeting.

Strategic Initiative F: Modernize infrastructure and technological resources to facilitate a positive learning and working environment. In the classroom and lab, new technology from a smart classroom to high-tech repair equipment keep ACRP training real and relevant to students seeking employment in the fast-paced and incredibly technical industry of collision repair and painting.

E. **Previous Recommendations.** Below is the list of 'Big Goals' recommendations from the 2015 program review report with comments on the current status of each:

1. **Industry Partnerships, Reputation Building and Student Job Placement**
    a. *Establish internship and two-way mentorship programs.* CREF selected ACRP as one of two west coast pilot schools for their '8 weeks in, 8 weeks away' internship model. If phase one is successful, ACRP will participate in phase two.

    b. *Create 'fast track' stackable Certificates of Achievement.* This goal is on hold due to campus-wide curriculum software transition delays. ACRP's two general auto collision Certificates of Achievement were converted in 2017 into fast-track stackable certificates requiring 24 units each instead of 32 or 40. We now have one Certificate dedicated to Collision Repair and one for Refinishing. The remaining three topics (structural repairs, mechanical systems and estimating) have yet to be submitted to the Curriculum Committee.

    c. *Create annual multi-campus student car show/industry job fair/media event.* This event requires a modest budget and significant participation from students, ECC staff and security, and faculty at invited schools, none of which have been received by ACRP in the quantity needed to hold the event. Local shop owners, vendors, the advisory committee and media contacts continue to be on board with the idea and are excited to participate in this event. In the

meantime ACRP has participated in multiple whole-campus career fairs at ECC, local high schools and adult schools.

2. Industry Certifications for Students

a. *Incorporate vital Inter-Industry Conference on Auto Collision Repair (I-CAR) Platinum curriculum and student certification.* ACRP achieved this goal in 2018 and was even approved to expand certification offerings to include Estimating and Welding certifications in 2019. Seven students have already completed their training hours and earned certification in one or more areas.

b. *Complete elite National Automotive Technicians Education Foundation (NATEF) certification for ACRP.* The 2019 advisory committee has advised against NATEF certification for ACRP at this time.

c. *Offer low-cost Automotive Service Excellence (ASE) student testing program and technician test study sessions.* ACRP won $1000 in grant money to cover student certification costs. 47 students participated, 81 tests were taken and a total of 51 certificates were awarded. Now that the grant has expired, students can attempt unlimited ASE certifications in auto collision and auto technology for the regular student rate of just $45 per student per year.

3. Continued Expansion of Course Offerings and Community Outreach

a. *Expand curriculum to include damage estimating and employability soft skills, as requested by students and advisory committee members.* We have reinstated and updated ACRP 3A (Automotive Collision Estimating) and created ACRP 3B (Computerized Damage Estimating) to address ACRP's training gap in estimating. Taking these two classes earn the student a Certificates of Accomplishment in Estimating. Soft skills have been added to existing classes and a one-unit class is being written to cover this topic specifically.

b. *Hold vendor demo days and one-day industry certification classes for students and existing local technicians.* Countless vendors have visited ACRP and held hands-on product demos for students thanks to NAPA representative and Advisory Member Steve Corbin. Through I-CAR's Fixed Training Site partnership, I-CAR instructors now hold industry certification classes for current technicians at ECC. The automotive paint company BASF, the sandpaper company Mirka, and the detail and polishing products company Presta have also held two- and three-day training and certification sessions at ECC for current technicians. Students are welcome to attend these sessions and receive certification for free.

c. *Attract new and non-traditional students via Saturday, Friday, afternoon and Community Education classes.* After the success of a Saturday 2-unit class for

non-majors in fall 2018, the offering was expanded to a 4-unit Friday evening/Saturday day class for spring and had a waiting list for fall 2019. The Monday/Wednesday evening class was shifted to 2:00-7:00 PM for students wishing to eliminate the afternoon gap in their schedule when they take two ACRP classes during the week, and the Tuesday/Thursday evening class remains available for students who work fulltime during the day.

d. *Actively target women and existing technicians seeking skills upgrades.* ACRP found success with the popular Girls in the Garage hands-on workshops and annual All-Girl Car Show until the Girls in the Garage name was trademarked by an Orange County transmission shop without due diligence. Focus has temporarily shifted to pursuing existing technicians, but ACRP is delighted to report that a record number of *seven* women enrolled in the Saturday class for fall 2019 out of a class of 26 (27%).

e. *Partner with Business, Manufacturing, Welding and Auto Technology departments to expose students to tangent and blended careers in automotive.* The Auto Technology courses in suspension and alignment and automotive electronics have been added to the ACRP AS Degree list of recommended electives with the intention of including them directly in a future 'Mechanical Systems for Collision Repair' certificate to mirror the ASE certification exam of the same name. ACRP has also joined the team of faculty working on a transfer-level math class designed specifically for students with hands-on trade majors. ACRP is also working with the Welding department to introduce I-CAR industry certification training in steel, aluminum and structural steel automotive welding to ACRP and WELD students.

2. Analysis of Research Data

A. **Head Count.** The numbers of auto collision department grades assigned per semester for each school and the state total are shown below. ACRP usually offers 6-7 classes per semester, and each class is set for 15-26 students each.

ENROLLMENT	Cerritos	Compton	Cypress	ECC	LATTC	Rio Hondo	State Total
Fall 2014	356	83	186	69	165	50	2335
Spring 2015	310	78	200	108	118	52	2303
Fall 2015	338	73	196	73	145	32	2181
Spring 2016	297	66	220	88	112		2050
Fall 2016	339	53	158	94	153		1894
Spring 2017	292	59	168	83	120		1874
Fall 2017	253	80	141	84	133		1825
Spring 2018	233	69	160	74	63		1662
4-Year Average:	302	70	179	84	126	45	2106

El Camino ACRP has room to grow. Our lab is not running at full capacity in the afternoons or evenings, and with the addition of online-only classes, there is no limit to the number of students we can train. ACRP could offer two more lab classes per semester if additional instructors could be found, or six more if the lab were shared as it is for the morning classes.

B. **Grade Distribution.**

GRADES	A	B	C	D	F	W	Total Enrolled
Fall 2014	38	39	11	1	3	20	114
Spring 2015	55	19	11	1	3	21	108
Fall 2015	44	21	13	2	6	12	98
Spring 2016	55	17	17	4	4	22	119
Fall 2016	68	14	13	6	8	7	118
Spring 2017	52	19	10	2	6	11	100
Fall 2017	44	10	11	2	0	13	84
Spring 2018	38	16	8	2	0	7	74
4-Year Average:							

These numbers are consistent with ACRP success rates and show most students perform very well in class. Those who do not succeed usually have attendance challenges and are learning how to juggle family, work and school responsibilities. According to student feedback, these challenges are to blame for the majority of Withdrawls as well.

C. **Success Rates.** Data for ACRP success and retention rates compared with state average and other local schools' data is shown below. Data highlighted in light green shows the semesters each school exceeded state average. Dark green boxes show the school with the highest percentage for each semester.

SUCCESS	Cerritos	Compton	Cypress	ECC	LATTC	Rio Hondo	State Average
Fall 2014	82.30	87.95	76.88	85.51	73.94	98.00	78.76
Spring 2015	78.81	92.31	74.50	78.70	88.14	78.85	77.77
Fall 2015	87.87	86.30	83.16	80.82	86.21	100.00	80.61
Spring 2016	83.50	83.33	85.91	82.95	82.79		80.29
Fall 2016	85.25	88.68	76.58	80.85	84.31		78.25
Spring 2017	77.05	79.66	78.57	85.54	94.17		79.14
Fall 2017	71.54	75.00	85.11	77.38	87.97		78.68
Spring 2018	71.24	89.86	79.38	83.78	76.19		78.28
4-Year Average:	78.95	86.11	80.42	80.85	85.33	84.88	78.91

RETENTION	Cerritos	Compton	Cypress	ECC	LATTC	Rio Hondo	State Average
Fall 2014	89.89	90.36	87.10	86.96	81.21	98.00	90.15
Spring 2015	86.45	93.59	90.50	82.41	88.98	92.31	90.32
Fall 2015	93.79	87.67	94.39	89.04	88.28	100.00	90.88
Spring 2016	90.24	93.94	93.64	86.36	90.16		92.15
Fall 2016	90.27	92.45	84.81	96.81	87.58		90.39
Spring 2017	86.99	83.05	89.69	95.18	95.00		90.98
Fall 2017	80.63	80.00	93.62	84.52	90.98		89.10
Spring 2018	77.68	92.75	91.88	90.54	85.71		89.58
4-Year Average:	86.72	89.49	91.71	89.77	90.06	94.20	91.00

As the numbers show, ACRP consistently exceeds state average for success, and has fluctuating semesters of excellent and average retention just as other schools do. It is, unfortunately, inaccurate and unfair to compare schools in this way since each school, class and instructor has unique content, dynamics, policies, expectations and rigor. ACRP intends to continue striving for excellence *without sacrificing academic rigor*.

D. **Retention Rates.** See 'Success Rates' above.

E. **Distance Education Classes.** ACRP does not currently offer Distance Education classes.

F. **Enrollment.** See 'Head Count' above.

G. **Course Scheduling.** The ACRP schedule is split between morning, afternoon and evening classes that are held Monday through Thursday, and a Friday/Saturday class held

SCHEDULE	Mon	Tues	Wed	Thurs	Fri	Sat
Morning	Beginning and Advanced ACRP Mon-Thurs, 7:00 AM – 12:40 PM Combined Lab					Fri/Sat 9:00 AM - 4:00 PM Sat
Lunchtime						
Afternoon	Mon/Wed 2:00 - 7:00 PM		Mon/Wed 2:00 - 7:00 PM			
Evening		Tues/Thurs 5:30 - 10:30 or 6:30 - 9:30		Tues/Thurs 5:30 - 10:30 or 6:30 - 9:30	Fri/Sat 6:00 - 9:00 PM Fri	
Night						

In the morning, the beginning course ACRP 1A and one rotating advanced class are always offered with a combined lab Monday through Thursday and alternating lecture days (purple). These courses are 8 units and run from 7:00 - 11:00 AM for lab and 11:15

AM -12:40 PM for lecture. Students love the 8-unit format and although they grumble at the early start time, they know it will prepare them for employers who expect them alert and on the job by 7:30 or 8:00 AM. The early start time also means an early end time, allowing students to go to work or take other classes in the afternoons and evenings. Student surveys consistently show strong support for keeping the 8-unit class format and enrollment for these sections almost always have full waitlists.

In the afternoon, ACRP offers a lecture/lab class from 2:00-7:00 PM on Mondays and Wednesdays (orange). This class is a rotation of the 4-series classes (4A, 4B, 4C, 4D) and the 5-series classes (5A, 5B, 5C, 5D). All of these classes are 4 units each and are offered in a rotation so that students whose schedule fits this Mon/Wed class can enroll semester after semester and complete their certificates without having to renegotiate work and family obligations every semester.

In the evening, the 4-series and 5-series lecture/lab courses are offered again in a rotation that is different than the afternoon class. These classes run 5:30-10:30 PM. ACRP's lecture-only classes are also offered in a rotation at this time (3A, 3B, 20, 22, 24, 26) from 6:30-9:30 PM. The lecture-only classes run 8 weeks and are offered back-to-back with their Certificate of Accomplishment partner so that students can earn their mini certificates in one semester.

ACRP's Saturday rotation of the 4- and 5-series classes spill over into Friday evenings due to the large number of lab hours needed. Friday evenings are lab-only from 6:00-9:00 PM, and Saturdays are lecture from 9:00-11:00 AM and lab from 11:30 AM-4:00 PM.

H. **Improvement/Persistence Rates.** No formal data is collected or known for persistence.

I. **Additional Data.**

J. **Recommendations.**

3. Curriculum

A. **Six-Year Review Schedule.** As a CTE program, ACRP reviews its curriculum every two years. The two-year CTE review is intended to be a light-duty checkup compared to the intensive six-year review, but usually so much has changed in industry that a complete analysis and adjustment is in order at every review. Below is a table showing ACRP's proposed review schedule based on recent curriculum review dates:

ACRP Course	Last Reviewed	Next 6-Year Review	Next CTE Reviews
1A	2017	2021	2019, 2021
1B	2017	2021	2019, 2021
1C	2017	2021	2019, 2021

1D	2017	2021	2019, 2021
2A	2017	2021	2019, 2021
2B	2017	2021	2019, 2021
2C	2017	2021	2019, 2021
3A	2018	2024	2020, 2022
3B	2018	2024	2020, 2022
4A	2018	2024	2020, 2022
4B	2018	2024	2020, 2022
4C	2017	2023	2019, 2021
4D	2017	2023	2019, 2021
5A	2018	2024	2020, 2022
5B	2018	2024	2020, 2022
5C	2017	2023	2019, 2021
5D	2017	2023	2019, 2021
6	2017	2019	2019, 2021
20	2017	2021	2019, 2021
22	2017	2021	2019, 2021
24	2017	2021	2019, 2021
26	2017	2021	2019, 2021

B. **Course Additions.** ACRP has reinstated and updated ACRP 3A, Collision Damage Estimating, and added 3B, Computerized Damage Estimating. A new Certificate of Accomplishment has also been created for the two. ACRP has completed the process of splitting repeatable classes 4abcd and 5abcd into four separate classes each. The process resulted in the creation of 4C, 4D, 5C and 5D.

C. **Course Deletions/Inactivations.** No courses have been deleted or inactivated.

D. **Distance Education.** ACRP does not offer Distance Education classes.

E. **Meeting Student Needs.**

1. *Two-Year Course Cycle.* Due to the large number of courses needed to properly train technicians in all aspects of modern collision repair, and due to finite lab and faculty size, ACRP must run its courses in a rotating cycle rather than offering every course every semester. The evening lab classes (4- and 5-series) run in a two-year cycle, the 20-series classes now run in a three-semester cycle, and the advanced morning classes run in a 3-year cycle. The Curriculum Committee, during the C and D course review process, expressed concern that an entering student might start in a semester that offers the C class rather than an A-designated class. It was explained that ACRP courses are set up to cover certain whole topics and procedures more like English classes (one can study literature before composition or vise-versa) rather than sequential like math classes (one must take algebra before geometry before

calculus). The answer satisfied the Committee and students have never expressed difficulty with the material from an underprepared standpoint – all classes assume the students are new to the topic.

2. *Articulation.* ACRP articulates its ACRP 1A Introduction to Collision Repair class with Compton Unified Regional Occupational Program's ROP Auto Body/Fender Repair class.

3. *Degrees and Certificates Awarded*. The two tables below show ACRP's award data for recent years. Two tables are necessary since ECC data does not match data found on the Chancellor's DataMart website. It is unknown which is correct. Mini certificate data (data for awards of less than 18 units) is not reported. ACRP does not receive the names of students who receive awards each year, which is a shame. More should be done within the ACRP to encourage and celebrate student achievements.

AWARDS (ECC IR Data)	Associate of Science Degrees	Certificates of Achievement	Certificates of Accomplishment
2013-14	2	6	Unknown
2014-15	3	7	Unknown
2015-16	5	13	Unknown
2016-17	0	4	Unknown
2017-18	2	16	Unknown

AWARDS (Chancellor's Data)	Associate of Science Degrees	Certificates of Achievement	Certificates of Accomplishment
2013-14	2	10	Unknown
2014-15	2	8	Unknown
2015-16	5	13	Unknown
2016-17	2	4	Unknown
2017-18	2	8	Unknown

4. *Certification/Licensure.* Although practicing collision repair does not require a state license, two industry certifications are highly recommended: ASE and I-CAR. The ASE Certification process outside of ACRP involves taking a rigorous pass/fail multiple choice test ($36 registration fee and $35 per test). One can become a Master Technician if they complete an entire series (four tests in the case of auto collision). ASE Certification is valid for five years and is almost imperative for auto mechanics, but a collision repair technician with this certification is also respected and valued among employers because of the difficulty of the tests – one cannot simply buy his way into certification, he must earn it. El Camino College can now help students earn

ASE Certification for just $45 per student per year for unlimited tests through our student testing program as mentioned in section 1D-7.

I-CAR Platinum certified status is currently more valuable to the hopeful collision repair jobseeker than ASE certification. Collision repair facilities that maintain a near 100% level of I-CAR certified technicians receive I-CAR Gold Class shop status, which makes the shop very attractive to insurance companies and customers who value repair jobs completed on time to high standards. The I-CAR Platinum three-level certification process outside of ACRP begins with the technician attending a series of eight to eleven $125 one-day lectures on topics related to their specific job duties and taking a short exit exam. A technician is then expected to maintain his I-CAR training by attending five to eleven more courses at similar cost in the following two years (levels) before switching to annual refresher courses. Completed courses are valid for only one year.

It is easy to see why employers would rather hire technicians who are already I-CAR Platinum certified than pay to send them to training ($1375 and 11 missed workdays to get to ProLevel 1 certification in just one area), especially since certification remains with the technician, not the shop, when a technician quits or transfers. ACRP has received I-CAR training materials and authorization to award Platinum certification to students through I-CAR's Professional Development Program Education Edition (PDP-EE). Including I-CAR content in ACRP curriculum has been simple since this material was already being taught - it is simply the existing industry-correct safety and repair methods and standards as branded by I-CAR. The areas ACRP can currently certify are: non-structural repair (level 1 and 2), refinishing (level 1 and 2) and estimating (level 1). In summer 2019 ACRP was also pre-approved to certify in steel, aluminum and structural steel welding (each at level 1).

F. **Related Recommendations.** The combined Advisory Committee for ACRP and Auto Technology (ATEC) has made requests and given approval for various topics, classes and stackable certificates. The list is below:

Aluminum repair, welding and bonding (2016) – ACRP now offers this technology, a stackable certificate for Metal Welding and Fabrication is in planning stages.

Waterbase paint (2016) – ACRP received donations and offers this training.

Soft skills/business management (2016, 2017, 2018, 2019) – ACRP offers these topics within classes, and a dedicated class is being written.

Online classes (2017, 2018) – Committee approved for lecture-only classes. ACRP intends to offer I-CAR classes this way through Community Education in 2020.

Hybrid vehicles class (2017) – ATEC has received vehicle donations and created an alternative fuels class for 2019. Hybrid and electric vehicle safety is covered as a topic in ACRP classes.

Nitrogen plastic welder (2016, 2018) – ACRP has requested grant funding for this machine.

Technical reading/data lookup skills (2018) – ACRP is incorporating the use of free online sources of repair data into general curriculum. Access to vehicle-specific OEM data requires sizeable annual funding. ATEC is looking into this and ACRP is ready to share financial responsibility.

Professional email and phone skills training (2018) – ACRP will include these topics in the soft skills class that is being written.

Photography for estimators (2018) – This topic is included in ACRP 3A and 3B.

Detailer certificate (2018, 2019) – ACRP plans to create a stackable certificate for detailing and interiors.

Math for the trades (2019) – Committee gave enthusiastic approval for a contextualized math class for trade students. It has been written and will be submitted to curriculum committee in fall 2019.

Setup and measure (2019) – This topic is considered to be a basic skill in structural repair. ACRP has requested grant funding each year for software updates to our measurement system but to date no funding or donations have been secured.

Vehicle teardown and parts cataloguing (2019) – This topic is currently covered briefly in 1A and other basic classes. More time and practice should be allocated to this topic at the next 2-year course review.

Big truck/fiberglass repair certificate (2019) – Fiberglass repair is covered briefly in some advanced classes. ACRP will research local industry demand to verify need for stackable certificate or if one class will suffice.

Classes in Spanish (2019) – This need will be even more urgent when ACRP targets existing technicians. I-CAR has announced it will be releasing its training and certification materials in Spanish in 2019 or early 2020. ACRP faculty would be wise to take Spanish language classes and create translated or dual-language handouts.

4. Student and Program Learning Outcomes

A. **Alignment.** Attached as Appendix A is ACRP's SLO and PLO alignment grid. Most SLOs are heavy in Content Knowledge and Critical Thinking, but show low ratings for Information and Technological Literacy. This is because the sixth ILO only includes computer and paper library-type reference material. It does not include technical machinery.

B. **Assessment Timeline.** Attached as Appendix B is ACRP's SLO assessment timeline, as created by TracDat (Nuventive). Since most of ACRP's classes run in a 2-year or 3-year rotation, each class is likely to be fully assessed every time it is offered.

C. **Percentage of Course Assessment.** ACRP has completed 100% of assessments assigned in TracDat (Nuventive) for the years 2014-1018.

D. **Assessment Results.** ACRP's SLO assessment results (Appendix C) are easy to attribute to the assessor. The fulltime instructor designed complex, multi-part activities with high target expectations so that both instructor and classes could build toward success over time. The logic was that as soon as the target is met consistently, a new goal would have to be set. The part-time instructors design their assessments for success, not growth. Their assessments frequently show students achieving the targets expected of them in class but not as much analysis or creative planning for future groups is included.

   Out of 64 total assessments, ACRP met the stated target percentage of success 41 times. A significant number of the instances where goals were not met were matters of a technicality such as the target standard being written as "90% of students" instead of "90% of students completing the assessment." When students drop the class or fail to participate in the full assessment, results for pre/post testing and cumulative projects are negatively skewed.

   Overall, ACRP faculty feel SLO assessment helps for self-reflection, but with the exception of a bit of leverage when it comes to advocating for a share of grant funding, there is not nearly enough use being made of these results at the campus or division level.

E. **Department Improvements Due to SLOs.** The most significant improvements to come from ACRP SLO assessments are improvements to the SLO statements and assessment methods themselves. The most popular comments and pledges for future changes and improvement address adjustments to teaching and testing strategies and requests for more in-lab equipment and materials.

   SLO Actions. The actions that did not involve changes to teaching or assessment strategy involved materials, supplies and laboratory conditions that must be addressed in ACRP budgeting and planning. Some examples include:

- Issues with insufficient or non-operational MIG welders and the need for more 220v electrical sockets for same (ACRP 1A, SLO #1 - Spring 2015; ACRP 1B, SLO #2, Fall 2014)
- The need for urethane primer for assessment activity rather than the donated alkyd primer used (ACRP 1A, SLO #2 and ACRP 2A, SLO #1 – Spring 2015)
- Safe storage for students' fender projects and other parts (ACRP 1A, SLO #3 – Spring 2016)
- The need for hands-on demonstration materials and teaching aids (ACRP 1B, SLO #2 and #3 – Fall 2017; ACRP 1D, SLO #3 – Fall 2015; ACRP 26, SLOs #1-3 – Spring 2014; ACRP 2C, SLO #1 – Spring 2014; ACRP 4A, SLO #1 – Spring 2015)
- The need for a second frame rack and up-to-date measuring system software, vehicle hoist and damaged vehicles (ACRP 1C, SLO #2 and #3 – Fall 2016; ACRP 1D, SLO #2 – Fall 2015, ACRP 1D, SLO #3 – Fall 2015 and 2018; ACRP 4D, SLO #2 and #3 – Spring 2016)
- The need for nitrogen plastic welder (ACRP 1D, SLO #1 – Fall 2018; ACRP 4C, SLO #1 – Spring 2017)

The large equipment has been added to PRP and grants are being sought. The small equipment requested includes 2-3 stud welder and slide hammer kits, an additional Maxi welder (purchased) and spray gun cleaning kits. The teaching aids requested include a hybrid vehicle with airbag system (donation being sought), shared access to ATEC's AllData computer system and printer, paint materials to create examples and negative examples of paint color blending, time and resources to create large posters of collision repair hand tool families with name labels to hang near the toolroom, digital cameras for proper damage estimating and documentation, and video media footage of collision impacts and occupant dynamics to aid the crash analysis and fraud investigation classes. Funding for these small items will be included in upcoming ACRP program planning.

F. **Related Recommendations.**

5. Analysis of Student Feedback

A. **Institutional Research Student Surveys.** The 2018 ECC student survey did not include questions specific to ACRP or Career Technical Education, but three questions asked 1633 students about their overall experience with El Camino and their answers are worth noting:

ECC makes a positive difference in people's lives. 96.8% of students agreed or strongly agreed.
ECC provides excellent comprehensive educational programs and services. 95.3 % of students agreed or strongly agreed.

ECC is a welcoming environment for students. 94.5% of students agreed or strongly agreed.

B. **Survey Results Implications.** Because the survey polled all El Camino students, we cannot know how relevant the results are to ACRP specifically although the numbers seem generally favorable.

C. **Other Relevant Surveys.** An internship survey was given to 17 advanced ACRP students asking for their thoughts on various aspects of designing a successful internship arrangement. Students had widely varying opinions of what employers might expect from or offer to a temporary, entry-level trainee. Students felt anywhere from 5 to 40 hours per week would make a good program, and compensation from $11 to $22 per hour was expected. Overall, the survey indicated the students were interested in an internship program of some kind, but also that the students have an incredibly limited understanding of shops' needs and that field trips to local body shops would be an excellent idea.

D. **Related Recommendations.**

6. Facilities and Equipment

A. **Existing Facilities & Equipment.** Now housed in the new Center for Applied Technology building, ACRP has had the opportunity to assess how our existing and planned technology, equipment and space can be put to the best use. Many visitors have complimented the lab space and natural lighting, and industry partners have responded eagerly to ACRP's partnership invitations to hold their training and demonstration sessions at ECC for students and existing technicians. Thanks to grant funding and recent donations-in-kind, ACRP is starting to look quite respectable in terms of modern equipment, so now the focus is on being able to use the equipment safely and efficiently, whether that is through installation and setup, working atmosphere (like lighting and security) or purchase of related consumable materials.

In the 2015 Program Review, ACRP reported short- and long-term needs. They are listed below with a status report for each:

Short-Term Needs – 2015	Status
Locks for the paint and lacquer thinner room doors	DONE
Finish the filtration and compressed air line connections in the spray booths	DONE
Outdoor working light to supplement emergency lighting in the yard	Received some, need more

Compressed air lines and electrical sockets for outdoor work stalls	NEED
220v 3-phase power in fabrication area for resistance spot welder	Received one
Roof extensions for outdoor prep stations, fabrication lab and spray booth areas	NEED
Vacuum bag attachments for hand-held sanders to minimize inhalation hazards	NEED, priority lowered
Concrete or thick metal ramps for vehicle access to spray booths	NEED
Floor sealer for interior lab floors	DENIED, still needed

Long-Term Needs – 2015	**Status**
Four-post vehicle hoist	Received, not installed
Second frame rack with computerized measuring system and diagnostic scanners	NEED rack, received scanners
Power Post kit with in-floor vehicle anchoring system	NEED
Re-frame, weigh and safely hang bas-relief Porsche on west wall of lab	DENIED, abandoned
Lockable storage area for student-owned and donated vehicle parts	NEED
Donated hybrid or electric vehicle for repair training purposes (could be shared with Auto Technology)	Deferred to ATEC
Aluminum welding and repair tools	DONE
Second frame rack with computerized measuring system and diagnostic scanners	NEED rack, received scanners

B. **Short-Term Needs (Next 1-2 Years).** The ACRP lab will need a few large and some small budget items as noted by the Advisory Committee, student and industry feedback and SLO assessment results. They are, in approximate order of department priority:

- Update Chief frame rack alignment software and Genesys measurement system
- Finalize in-floor installation assessment and purchase Power Post system
- Finalize installation of 4-post lift
- Purchase supplies to create welding stations for I-CAR certification
- Replace and supplement small pneumatic and hand tools as required by extensive use
- Purchase nitrogen plastic welder
- Convert booth air hoses to 5/16” ID and install Grade D filters for supplied air respirator systems
- Fiberglass parts donations including one big rig cab shell with hood and fenders

C. **Long-Term Needs (2-4+ Years).** The following equipment and facility upgrades are needed now, but funding and construction approval have historically taken more than 1-2 years to finalize, so they are listed here in no particular order:

- Additional compressed air lines and electrical sockets for outdoor work stalls
- Roof extensions for outdoor prep stations, fabrication lab and spray booth areas
- Floor sealer for interior lab floors
- Replace current air compressor prone to failures with rotary screw air compressor
- Lockable rolling cages for student-owned and donated vehicle parts
- 220v 3-phase power in fabrication area for resistance spot welder
- Outdoor working light (flood lights) to supplement emergency lighting in the yard
- Dustless sandblasting setup
- Car-O-Liner frame rack and computerized measuring system

This list of new and updated equipment represents ACRP's commitment to the best quality, most industry-relevant training opportunities for students. Without it, ACRP will simply have a collision repair and paint program, with little long-term potential for growth or acclaim. With it, ACRP will be able to back our efforts to be known as *the* collision repair and paint program to attend in Los Angeles county, worthy of industry partnerships, vital for existing technician lifelong learning and career progression, and inspirational and exciting to current and future students alike. See Appendix D and E for funding and installation labor required.

D. **Related Recommendations.** Students surveyed have requested showers and more restroom lockers for the CAT building. When students work after class, it is inconvenient for them to drive home to shower and awkward to go to the gym building. Some students insist they must leave class early to accommodate going home to clean up before work.

7. Technology & Software

A. Existing Technology. ACRP has recently received grant funding for and donations of some key tools, equipment and software, but some will still need to be purchased. Recent acquisitions include an updated squeeze-type resistance spot welder (STRSW), aluminum dent repair equipment, aluminum and silicon bronze welding rigs, aluminum rivet gun, paint formula lookup computers and scales for BASF and PPG, and other small hand-held tools. Each year, CREF donates annual subscriptions to the three industry standard estimating software programs (UltraMate, Mitchell and CCC One) that need to be installed and maintained at ECC.

Immediate Needs. ACRP's immediate needs include:

Second frame rack and computerized measuring system updates. Our existing frame rack (Chief EZ Liner II) has a computerized measuring system (Genesis Velocity), but it is outdated and the data for vehicles produced in the last 20 years - the vehicles most in need of precise repairs for technical and liability reasons – is not available in our current computer system. By choosing a rack system different from our existing Chief, ACRP will be able to offer students a wider variety of training options to cover the needs of more repair shops, including the ability to host training and certification sessions for existing local technicians.

Laptop computers for the estimating classes. These machines will house copies of the CCC One and Mitchell Estimating software granted annually by CREF, and will allow our classroom-only 3B students to bring the computers to real damaged vehicles on campus just as estimators do to with cars in their shops.

B. Long-Term Needs. Items that will be needed in the next 2-4 years are:

OEM technical data repair website subscriptions (shared with ATEC). For modern cars, having technical data and proper repair procedures specific to each vehicle model and make is critical to safe, correct repairs. Advisory members report local shops are having difficulty training aging technicians to use computers and online reference materials, but unfortunately these experienced senior techs are the most likely to be assigned difficult repair jobs. This discrepancy presents an opportunity to expand training in ACRP, but we will need more than the free online resources we are currently using to best train these techs.

C. Related Recommendations.

8. Staffing

A. Current Staff. ACRP staff includes one full-time instructor, three part-time instructors, one full-time toolroom attendant and two part-time attendants that are shared with other departments. One part-time instructor retired in 2017.

B. Future Staffing Needs, Short Term and Long Term. Considering the expansion proposed for online-only classes, new target market of existing technicians and the Advisory Committee's recommendation for additional stackable certificate offerings, ACRP should hire *two part-time instructors and a part-time assistant/industry liaison* to help with industry outreach and the paperwork and communication needs associated with ACRP's plan to mass market to existing technicians, many of whom have never attended college and may not speak English well.

Part-time instructor #1. ACRP has not been able to fill the part-time position vacated by our evening instructor, and the class has not filled due to student distrust of signing up for a class taught by 'Staff'. A new instructor must be found. The following the Tuesday/Thursday night class had with the other instructor is fading and may need to be rebuilt from scratch. The class has failed to meet minimum enrollment each semester and has been cancelled every time. This is too important of a time slot to students who work days not to offer evening classes.

Part-time instructor #2. A new part-time instructor should also be hired to take over the Friday/Saturday class. This class is currently taught by the fulltime instructor who has built up a solid following, but who is now needed to create and boost other class opportunities.

Industry Liaison. A part-time industry liaison has been requested in PRP (2017, 2018, 2019) and would be shared by all departments in the CAT building (ACRP, ATEC, WELD and ACR). This desperately needed person would be the 'voice' of these departments since fulltime faculty are not available to answer phone calls during classes. When shop owners call ACRP, they expect their calls to be answered immediately, as they are in industry. Shops have no patience for a student worker who is replaced every semester and who doesn't have the consistency of experience to answer their questions. ECC and ACRP *cannot* afford this kind of first impression with the shops we will be working so hard to attract and create partnerships with. We must be fully ready to provide both the training we promise and the customer service they deserve if ACRP is to be successful in attracting existing technicians and job placement partnerships with local shops. The industry liaison hired would also be a great help in keeping department webpages and social media sites updated, assisting with events and registration, obtaining donations, and helping with alumni tracking and job placement services.

C. Related Recommendations: Lab Assistants. When surveyed, students frequently request extra instructors or knowledgeable helpers during lab to compensate for the large student-to-teacher ratio of a combined lab. To comply and to help instructors monitor the lab for safety, work-study students have been hired to assist in the lab, which has been a challenging job since most students feel awkward 'bossing' their peers around regarding safety reminders and proper tool use. Adult volunteers with a background in collision repair have also been welcomed to assist in the lab, although finding a reliably committed volunteer has been a challenge. While ACRP continues to struggle to find a perfect solution to this issue; the current solution is one of simple kindness: most advanced students are happy to assist beginners with basic questions. Teaching a method or procedure to someone else forces the advanced student to remember and perform it correctly himself, which solidifies the procedure in his memory too.

9. Future Direction & Vision

A. Industry Changes and Their Effects on ACRP. The CREF industry survey and Advisory Committee have helped identify a few important trends affecting the industry nationwide that will need consideration by ACRP:

Aluminum (2016). The biggest industry news in 2016 was aluminum repair. High-end and limited-production vehicles had been built using aluminum panels for years, but when Ford released their all-aluminum-bodied F-150, the immense popularity of the truck meant average shops were very likely to encounter a damaged aluminum vehicle in their shops. New tools and equipment were needed, new 'clean room' areas were needed, and most critically, new repair procedures needed to be learned. What to do? ACRP has secured aluminum repair tools and now teaches this topic in some of its advanced classes. A dedicated class and stackable certificate in metals are justified.

Liability and OEM Repair Procedures (2017). The biggest news for 2017 was the John Eagle lawsuit regarding the severe burn injuries of two passengers in a rollover accident whose car did not allow their escape because the roof had been replaced improperly. The couple was awarded $43 million to be paid by both the insurance company and the shop that performed the repair. The lawyer arguing the case made it clear he was not out to punish one shop specifically, but to raise awareness among insurance companies that their practice of not wanting to pay for proper OEM repairs was causing shops to be financially forced to perform unauthorized repairs. Not surprisingly, the case caused a wave of panic throughout the industry as shop owners and technicians tried not to think of all the improperly repaired vehicles on the road today, any one of which could put them out of business with a lawsuit. In response, most shops are now fully committed to using proper OEM repair data and procedures, but their senior technicians are not computer savvy enough to be comfortable with the digital format. ACRP can help, and 'the right way' has always been how we strive to work. We are limited only by access to repair information.

Scanning and Documentation (2018). Computerized diagnostic scanners have become common in auto mechanic shops, but their importance in collision repair is becoming more and more important. Building on the new focus of correct repair procedures and limiting shop liability, shops are now adopting the pre- and post-scanning of vehicles to create proof and documentation that the repair was performed properly and no computer, sensor, or safety issues remain. ACRP has purchased one of these scanners, and its use is taught in advanced classes. It is difficult to share one hand-held scanner between 26 students and it would be wise to expand training to all classes.

I-CAR Training, Version 2.0 (2019). The biggest news for 2019 is I-CAR's redesigned training and certification packages for industry. Some big improvements besides new training modules for aluminum and electronics include subscription pricing for shops and the eagerly awaited release of training modules in Spanish. I-CAR's mission statement states the organization aims to provide ALL technicians with the information

they need to perform safe, correct and successful repairs. ACRP is all in with these changes and is excited to integrate more I-CAR certifications into its curriculum.

Aging Workforce (Ongoing Concern). Over the last 5-10 years, shops have noticed that their best senior technicians are getting older and are either retiring or facing physical limitations to performing their jobs. Shops have also reported dissatisfaction with hiring and training new entry-level technicians (C-techs). The common solution is to run assorted ads here or there requiring 3-5 years' experience, and to ask current techs 'if they have a brother'. This strategy is not working for them, as one can imagine, and the problem has gone from irritation to budding panic. The overall problem has many layers, but ACRP believes the best way forward is to get students working in shops before they graduate through internship partnerships.

ACRP has been working with CREF and the Collision Career Institute (CCi) to develop an internship program that will work long-term for both students and employers. It is not easy. Shops do not value minimally skilled workers and do not offer them a living wage. They do not understand that all technicians must participate in lifelong learning to stay valuable and that learning takes time and patience. Some shops refuse to hire anyone who needs training, and other shops have tried to create training centers within their organizations but have found that they are better businesspeople and technicians than teachers. ACRP can help, but faculty have been too busy and isolated teaching classes to properly introduce themselves on a large scale. ECC has not had a job placement team for a few years and our grads were simply turned loose to fend for themselves. Meaningful alumni tracking was non-existent, and in general the industry faces an overall lack of communication between shops, schools, technicians, students and the general public (vehicle owners/customers).

B. **Direction, Vision and Achievement Plan.** ACRP has every intention of growing to become not just a survivor of budget cuts but a destination school for high school graduates and existing technicians - something to aspire to, an honor to attend. It will become a hub of interaction between student technicians, existing technicians, employers and automotive tool and equipment companies. This goal will take significant personnel, time, marketing money and effort, more than new equipment or technology. ACRP's 2019 direction will be one of outreach, marketing and partnerships, which cannot happen without campus staff and industry assistance.

The table below shows the status of ACRP's 2015 direction and vision goals:

Direction and Vision for ACRP – 2015	**Status**
Make industry certifications available to students (ASE and I-CAR certification for students, NATEF certification for ACRP).	ASE and I-CAR DONE, NATEF on hold
Split the existing 32-unit Certificates into 'fast track' job-specific Certificates of 18-22 units.	DONE

Create an advertising campaign to introduce ACRP to local shop owners. This campaign will aim to create advisory partnerships, job placement opportunities and student tracking assistance.	NEED
Boost students' competitive spirit and personal efforts by initiating a media-intensive annual inter-campus student car show/job fair.	NEED
Seek industry donations and donations-in-kind to make sure ACRP teaches the latest repair methods using up-to-the-minute materials and technology.	ONGOING
Create a second advertising campaign to trumpet student skills and job readiness to employers and high school staff to focus existing demand for quality hires and quality training in ACRP's direction.	NEED
Position ACRP as an industry training center, not just a community college, to attract existing technicians seeking to update their skills and to challenge local shop owners' stereotype of the college as a place where automotive students merely read textbooks and watch filmstrips. Leverage tool and equipment company vendor partnerships to provide sponsored, brand-specific certification training on site.	NEED/ONGOING

ACRP's new goals, direction and vision for 2019 are:

- Focus targeted marketing on attracting existing technicians for training
- Market ACRP to shops for internships, job placement, training services and donations
- Market ACRP to high school and college students to build interest in this major
- Raise awareness of and build respect for ACRP within the community
- Expand stackable certificate and industry certification offerings
- Improve connections and long-term relationships with graduating students and alumni
- Back up marketing efforts with the fully functioning facility, equipment, software and personnel to provide the training and opportunities promised

E. **Related Recommendations.**

10. Prioritized Recommendations

A. Prioritized List of Recommendations and Needs. ACRP's priorities, according to overarching department goals, are outlined below. Costs and alignment with Strategic Initiatives can be found in Appendix E.

1. Graduates and Jobs

a. Placement
b. Internships
c. Tracking/celebration of accomplishments

2. New ECC and Industry Certifications
    a. Expand I-CAR certification offerings
    b. Continue and promote ASE certification testing
    c. New stackable certificates and classes
        i. Detailing and Interiors certificate
        ii. Metal Welding and Fabrication certificate
        iii. Structural Repairs (ASE B4) certificate
        iv. Mechanical Systems for Collision Repair (ASE B5) certificate
        v. Contextualized math for the trades class
        vi. I-CAR and intro courses in Spanish
        vii. Online classes for I-CAR certification and estimating
        viii. Soft skills and business management for success in the trades class
        ix. Fiberglass and composites repair class
3. Marketing and Outreach to Industry
    a. Job placement partnerships and internships
    b. Multiple training opportunities for existing technicians including I-CAR certification
    c. Donations-in-kind
    d. Potential Advisory Committee members and feedback
4. Marketing and Outreach to Students
    a. Web updates and social media
    b. Multi-college student car show and hiring fair
    c. Vehicle build-offs and event participation
    d. SkillsUSA participation
    e. High school and adult school visits
    f. Student automotive club
5. Support Systems Needed
    a. Faculty and Staff
        i. Replace retired part-time instructor
        ii. Hire additional part-time instructor for expansion
        iii. Hire part-time assistant/industry liaison for CAT building
    b. Building
        i. Roof extensions for spray booths, prep stations and fabrication area
        ii. Epoxy floor sealer and repaint lines inside lab
        iii. Showers and additional lockers
    c. Equipment
        i. Install purchased equipment (4-post lift, Power Post)
        ii. Purchase and install 2nd frame rack
        iii. Nitrogen plastic welder

d. Electrical
    i. 220v 3-phase in fabrication area
    ii. Change 220v single phase plugs in fabrication area (4)
    iii. Additional 110v in fabrication area and stalls 21-30 outside of lab
    iv. Flood lighting for ACRP yard
e. Air
    i. Replace compressor with rotary screw compressor
    ii. Add air drops to stalls 21-30 outside of lab
    iii. Change air hoses in spray booths to 3/8" ID
    iv. Add filters for Grade D breathable air in spray booths
f. Computers and Software
    i. Chief frame rack software update
    ii. Laptops for estimating classes
    iii. OEM data resource subscriptions
    iv. Digitized tool checkout, supply sales and inventory system

B. Justification for Prioritization. Because ACRP's list of recommendations and needs are so intertwined, the list above has been prioritized within each heading rather than overall. Many of these goals will need to happen at the same time and require other supporting goals in other categories. Some goals are urgent but will take more time to achieve, and to rank a long-term goal first because we should start now may give the impression that the easier goals listed below it must wait until the completion of the first goal, which is not the case.