

a national career pathway
for Surveyors

CHOOSE
YOUR
ADVENTURE



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NATIONAL CAREER ROADMAP FOR THE INDUSTRY

This paper details a project aimed at creating a national career pathway for Surveyors in Australia. The goal is to establish a clear and sustainable path to attract individuals to the Geospatial Industry and demonstrate how they can advance their careers, enhance their skills and knowledge and gain professional accreditation.

The project was initiated by The Surveyors' Trust as one of the recommendations from the *Surveying and Spatial Workforce A National Roadmap*, published in April 2022. It was developed through extensive consultations with employers, educators, career advisors and other stakeholders who identified the need for a more structured and effective career development process and pathway for Surveyors. The consultant was tasked with designing a comprehensive national career pathway for Surveyors, which includes various career stages, competencies and development opportunities.

This pathway represents phase 1 of a recommended three-phase approach and sets the foundation for the development of career guidance materials and talent attraction campaigns. This paper provides an overview of the project, its objectives and the key outcomes achieved. It also outlines the various stages of the project, the methodologies used, and the learnings and recommendations for future enhancements to the career pathway to ensure its ongoing effectiveness and relevance.

The National Career Pathway presented in this paper is a collection of diagrams designed for individuals aged 15 and above, targeting school leavers and established workers seeking career advancement or change. The diagrams are accompanied by an overview of career system and program design concepts, stakeholder engagement, and marketing and communication strategies. These concepts and strategies aim to attract talent from multiple perspectives, encouraging thought-provoking conversations among individuals, parents, teachers, career advisors, professionals and industry stakeholders.

The National Career Pathway diagrams form the foundation for further development of career systems and programs that encourage engagement across traditional and non-traditional groups to diversify the workforce and attract more talent to the Geospatial industry.

While, this project represents a significant undertaking it should be considered an important initial step towards an ongoing evaluation of the way the Industry presents career opportunities nationally.

ABOUT THE PAPER

METHODOLOGY

The genesis of the development of a National Career Pathway came from *The Australian Surveying and Spatial Workforce A National Roadmap* published by The Surveyors' Trust in April 2022. The Roadmap presents a set of integrated initiatives to underpin workforce planning and development activities across the Geospatial Industry.

The Roadmap's 5 recommendations are:

1 NATIONAL WORKFORCE TASKFORCE: establish an Industry-led national workforce taskforce to lead a national strategy and evaluate impact.

2 ENVIRONMENTAL SCAN: deliver biennial research on the state of the industry including analysis of elements impacting the workforce such as legislation, funding, technology, pathways.

3 NATIONAL COMPETENCY FRAMEWORK: develop a national competency framework from entry-level to executive level. Map to relevant frameworks. Represent the whole workforce.

4. TAXONOMY OF OCCUPATIONS: develop a taxonomy of occupations across the Geospatial Industry workforce. Include ANZSCO and industry-defined occupations.

5. NATIONAL CAREER PATHWAY: develop a national career pathway that brings together multidimensional pathways. Map to the competency framework and taxonomy of occupations for relevance.

The development of the National Career Pathway presented in this paper was based on over 50 1:1 consultations across the Industry including stakeholders from the following groups: schools, TAFE, Universities, employers, industry associations, other industry sectors such as ICT, Digital and Digital Health, career advisers and career development organisations.

The Pathway diagrams draw on various materials and sources to inform the user of the requirements and characteristics of the Industry recognised across multiple jurisdictions.

Below sets out some sources and materials used to inform the language and style of the pathway diagrams:

- A Life Without Limits
- Australian National Career Blueprint
- CRSBANZ National Competency Standards
- FIG Commissions and Sustainable Development Goals commitments
- Education Services Australia Limited
- Engineers Australia
- SFIA
- SheMaps
- SSSI Land Commission Project Sirius
- Surveying Careers
- United Nations Sustainable Development Goals
- Work Study Grow
- Year 13

Whilst the feedback varied on specifics, the general consensus of what should be included in this first phase of design is presented in this paper.

The objective of this project is to design a set of diagrams that presents the pathways into and within the Geospatial Industry with a specific focus on the occupation of Surveyor in a simple and engaging way. This paper presents a workforce system and program design to attract and retain talent to the occupation and should be incorporated into a product life-cycle review.



LEARNINGS

At any time but particularly in today's competitive job market, it is essential for the Geospatial Industry to take a multi-prong approach to developing talent attraction strategies that appeals to diverse groups of people, from school students to career changers and return-to-work parents.

One way to achieve this is by fostering strong partnerships with educational institutions to create programs that can engage students at an early age and provide them with exposure to the industry and career paths available. Additionally, the industry should focus on creating opportunities that appeal to career changers who may require cross-skilling, reskilling or upskilling programs to transition into new roles.

There continues to be a lack of commonly understood nomenclature across the Industry shaped by jurisdictional differences. This may cause confusion or present a level of complexity that may dissuade talent to the Industry leaving them to select another profession that is presented with clarity.

The Industry generally operates with a high level of complexity, particularly the higher up the specialisation one might advance. Generally, views on how to address skills gaps have focused primarily on school-aged students with the view that educating younger generations on the occupation will increase interest and enrollment into tertiary qualifications and degrees.

The Geospatial Industry would benefit from setting **agreed measurable goals** to evaluate the effectiveness of talent attraction programs and marketing for instance:



an uplift in tertiary enrollments

tertiary completions

employment outcomes

employer satisfaction

the number of Licensed Professionals

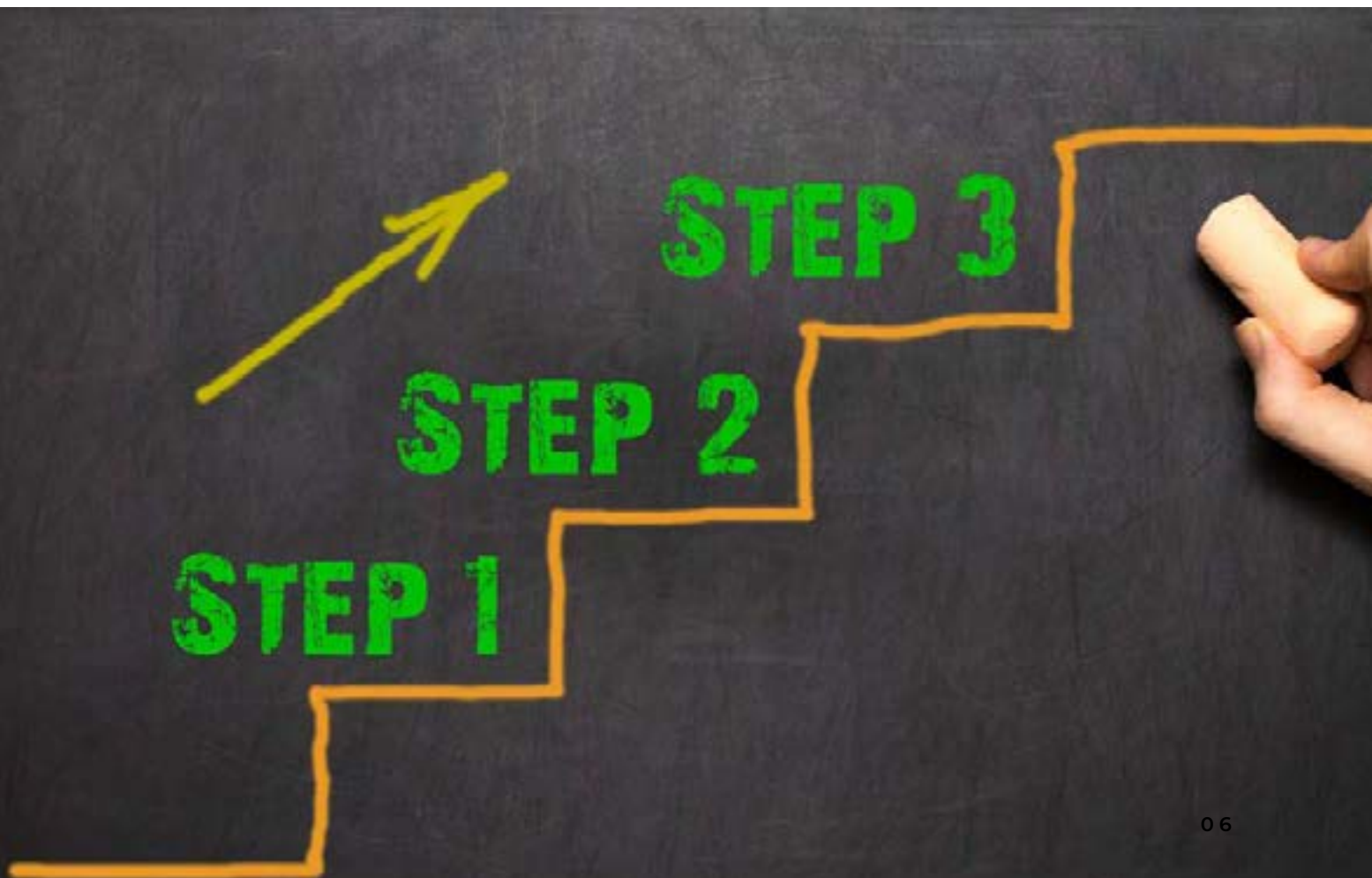
the number of Industry certified professionals

RECOMMENDATIONS

To increase awareness and interest in the Industry, it is recommended that a comprehensive marketing approach be adopted. This should involve targeting different groups such as school students, while also encouraging existing workers to pursue higher positions in the field.

The Industry would benefit from a multi-faceted marketing campaign that utilises various methods such as advertising, programs, advocacy, and promotion of the profession through tenders and submissions. To successfully execute this campaign, a whole-of-Industry commitment is necessary. National Industry Associations should lead the efforts in marketing and activations throughout the Industry ecosystem to attract new potential talent.

To accomplish this ambitious endeavour, a **three-phase approach** is proposed. Ongoing evaluation and development will be required to ensure its success.



3 phase national program development

1. FOUNDATIONAL PATHWAY

- Initial design of a National Career Pathway
- Set the framework for broader stakeholder engagement for a whole-of-Industry program
- Deepen stakeholder engagement

2. MARKET NEEDS ANALYSIS

- Identify productivity needs
- Industry to agree on measurable goals
- Design career development programs aligned to industry needs
- Design marketing and communications strategy to target audiences

3. SCALE-UP

- Bring to life the Pathway and programs on a digital platform
- Amplify marketing and promotion of programs through digital marketing channels and networks
- Collaborate with aligned sectors for greater impact

Phase 1: The Industry builds on the foundations of the delivery of this project and refines language, sets goals to measure the impact and puts in place various frameworks to lead stakeholder engagement and evaluate performance.

Phase 2: The Industry to have a deeper understanding of the market needs and workforce structure. It should set the target indicators and contextualise career pathway systems and programs according to market needs.

Phase 3: Transition to a fully accessible, digital environment for the career pathway and programs supported by digital marketing campaigns, strategic partnerships and Industry-wide activations. This is to support greater amplification of profile and effort by reaching larger audiences and deepening engagement across the ecosystem.

Importantly, **continuous improvement** needs to be applied to ensure what is communicated is market relevant and engaging. The remainder of this paper provides guidance in implementing these recommendations.

SETTING THE SCENE

The Geospatial Industry has become an essential component of modern society, providing critical information for a broad range of applications from environmental management to infrastructure development. As the industry continues to grow, there is a pressing need for a skilled and competent workforce to ensure its sustainability.

Surveyors play a vital role in this workforce, providing critical data and analysis that forms the foundation of many geospatial applications. They are responsible for collecting and analysing spatial data, and ensuring the accuracy and integrity of the resulting Geospatial products.

Without skilled Surveyors, the availability, accuracy and reliability of Geospatial data could be compromised, undermining the usefulness and reputation of the Industry as a whole. Therefore, it is crucial to recognise the critical role of Surveyors and ensure that the workforce is equipped with the necessary skills and knowledge and the numbers needed to meet the increasing demand for Geospatial services.

The Australian Surveying and Spatial Workforce A National Roadmap highlights various factors that have led to the talent shortage in the Geospatial Industry. These include:

Aging workforce
Lack of interest in the Surveying profession
Limited tertiary education options
Competition from other industries
Lack of regular data on the state of the workforce
Confusion being caused by the Industry's lack of coordination

UNDERSTANDING THE AUDIENCE

Understanding the audience is critical for developing effective talent attraction strategies. Below sets out some key considerations:

1

Demographics

Consider the demographic characteristics of the target audience, such as age, gender, education level and work experience. This information can help you tailor your messaging and outreach efforts to better resonate with your target audience.

2

Psychographics

Consider the psychographic characteristics of the target audience, such as values, interests and motivations. This information can help develop messaging and content that is more likely to engage the target audience.

3

Communication preferences

Consider how the target audience prefers to receive information and communication. Some people may prefer email, while others may prefer social media or phone calls. Knowing this information can help develop communication strategies that are most effective.

4

Employment needs

Consider the employment demands of the Industry and the goals of the target audience. What is Industry looking for? Where are the opportunities located? What types of jobs is the audience looking for? What benefits are important to the audience? What are their career aspirations?

5

Industry knowledge

Promote the elements of the Industry that would best resonate with the target audience. Understanding the trends, challenges and opportunities across the Industry will help shape messaging and content that speaks directly to the target audience's interests and concerns.



Understanding the motivations and having data on key influences that help shape individual's career decisions is essential to design talent attraction and work readiness programs aimed at:

Students

For school students, what social and environmental influences shape career decisions?

For tertiary students that leave their studies for other subjects, where are they going and why are they leaving? Understand what can be done to retain these students.

For graduates, find out where they transition to.

What occupational choices are they making?

Career transition

What career transitional trends are happening across the Geospatial Industry and aligned industries that the Industry can leverage or learn from?

For people who transition into the Geospatial Industry, what occupations did they hold prior to transitioning across?

What are the personal motivations for people to transition into the Geospatial Industry?

Industry

What level of skill is needed in the Geospatial Industry, where and when?

What level of training does the Industry provide and how is it delivered?

What tools or incentives does the Industry need to attract established workers such as return-to-work parents or talent that falls out of the system due to various causes?

What support do employers need to increase work experience programs?

Having this type of information helps to shape marketing campaigns and program design. It allows the Industry to make informed decisions about what to communicate, who to target, when and through what channel and helps to shape messaging in a way that translates into personal values.

Shaping the messaging to trigger positive responses from individuals based on interests will go a long way to lifting the profile of occupations in the Geospatial Industry.

Below are some issues people consider when making decisions about their careers that should inform materials developed.



CAREER GUIDANCE

Career development guidance is a complex process that involves a range of social and environmental influences.

While individuals have some control over their career decisions, they are also subject to a host of external factors that can influence their choices including:

Social Influences on career development are significant and can take many different forms. For instance, family members, friends and mentors may all play a role in shaping an individual's career aspirations. Parents, in particular, can have a powerful impact on their children's career choices. They may encourage their children to pursue certain careers, based on their own experiences or values, or they may provide financial or emotional support that enables their children to pursue particular paths.

Peer influence is also an important factor in career development. Friends and colleagues can influence an individual's career aspirations by providing advice, guidance or simply by modelling certain behaviours.

Environmental factors can also play a significant role in career development. These may include economic conditions, political factors and cultural norms. For example, economic downturns can make it difficult for individuals to find employment in certain fields, while political factors can create barriers to entry in others. Cultural norms may also influence career choices, with certain careers being more highly valued or respected in certain societies than others.

Technology and globalisation have significantly impacted the job market, creating new opportunities and challenges for individuals. Automation has made some jobs obsolete, while creating new ones that require specific skills and training. Globalisation has led to increased competition for jobs, as well as the emergence of new career paths that require a global perspective.



These influences can shape an individual's career aspirations and create both opportunities and barriers. To be effective, the Industry should take a flexible and holistic approach, considering an individual's unique circumstances and providing guidance that is tailored to their needs.

Young people are often a key focus of career guidance as their needs and obligations intersect with education and employment. However, the productivity needs of the sector should be taken into account when designing career pathway systems and programs. This includes identifying where the most critical need is and when the demand will peak and shaping attraction programs accordingly.

CAREER PATHWAY SYSTEMS AND PROGRAMS

Career pathways are becoming increasingly essential to businesses in shaping and managing their workforces. They operate at two levels - a systems level and an individual program level.

Career Pathway Systems

Career pathway systems offer an effective approach to the development of a skilled workforce by increasing the number of workers who gain industry-recognised and academic credentials necessary to work in jobs that are in demand. To align educational offerings with business needs, career pathways systems engage businesses in the development of educational programs up front.

Career pathways systems transform the role of employers from a customer to a partner and a co-leader and co-investor in the development of the workforce. Employers have a high stake in the development of career pathways that lead to an increase in their pipeline of qualified workers.

Additionally, career pathways systems offer a more efficient and customer-centered approach to workforce

development because they structure intentional connections among employers, adult basic education, support service providers, occupational training and postsecondary education programs and design the systems to meet the needs of learners and employers.





Career Pathway Programs

Career pathway programs make it easier for people to earn Industry-recognised credentials through avenues that are more relevant; to provide opportunities for more flexible education and training; and to attain market-identifiable skills that can transfer into work.

These comprehensive education and training programs are suited to meet the needs of working learners and non-traditional students. Career pathways programs are designed to serve a diverse group of learners including adults, youth, dislocated workers, return-to-work parents, career transitional workers, individuals with a disability, new immigrants, cultural and diverse workers and so on.

At the systems level, career pathways development is a broad approach for serving populations that may otherwise experience barriers to employment and can substantively alter the way the workforce system delivers its services and its relationship with partner organisations and stakeholders.

Career pathway programs offer a clear sequence, or pathway, of education coursework and/or training credentials aligned with employer-validated work readiness standards and competencies.

SHARED RESPONSIBILITY

When developing programs to attract people to the Geospatial Industry, involving multiple stakeholders is crucial as they bring diverse perspectives, experiences and expertise to the table.

Shared responsibility enables a comprehensive and holistic approach to designing effective programs that appeal to a diverse range of people. Additionally, engaging multiple stakeholders ensures they are relevant, accessible and inclusive. Stakeholders can offer valuable insights on how to make the programs more engaging, informative, and appealing to the target audience.

There is pressure on young people to make decisions about their careers with increasing competition from various industry sectors to influence decisions. Shared responsibility to attract talent is best delivered through a collaborative effort between different stakeholders within and across the Industry.

As already established, career pathway programs do not work well when designed and delivered in silos. They need to be designed and implemented across multiple stakeholder groups to ensure continuity and awareness is constantly reinforced.



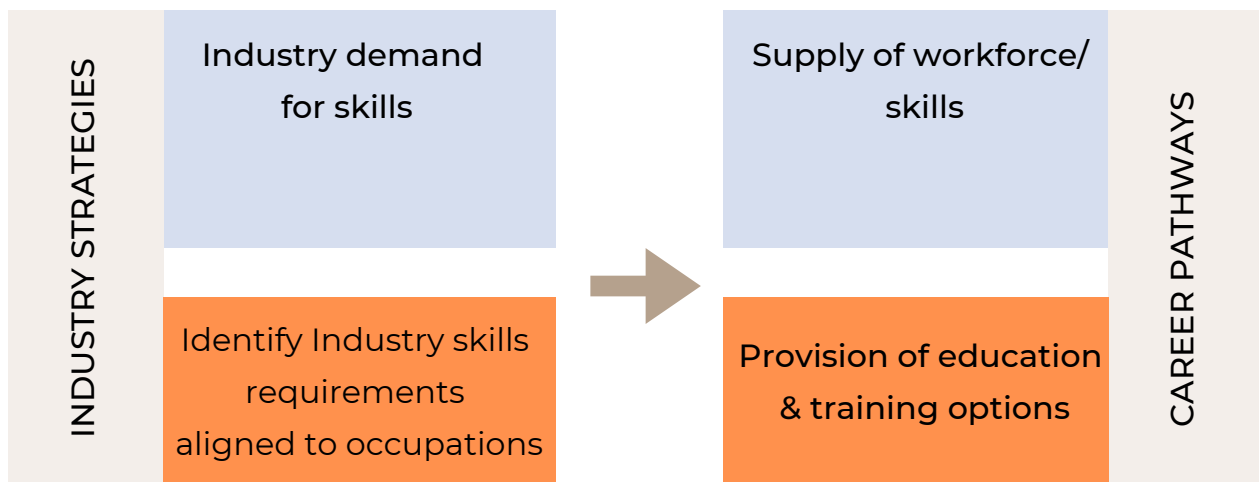
Ensuring the right stakeholder groups are included in the design and implementation of career programs is important.

Government	Legislation impacting regulated occupations Buyers of services
Regulators	State and Territory Surveyors Boards
Industry	Industry and Professional Associations, Employers and Individual Professionals
Education and Training	Schools, Public and Private Registered Training Providers, Universities, Vendor Training
Recruitment Providers	Recruitment and on-hire labour companies
Communities	Benefactors of the services delivered by Surveyors

To achieve a lasting impact, a well-coordinated plan is essential. The Surveyors' Trust is taking the lead in this effort by convening the inaugural meeting of the National Workforce Action Group, as recommended in the *Surveying and Spatial Workforce A National Roadmap*. This is a critical step towards establishing a shared understanding of the responsibilities that cut across the Geospatial ecosystem.

The Action Group is made up of government organisations, regulators and industry stakeholders, which ensures a comprehensive approach to tackling this complex issue. By working together, the Action Group will develop a coordinated plan that drives long-term change and addresses the challenges faced by the Geospatial Industry's workforce.

AN EXAMPLE OF COMPLEMENTARY APPROACHES TO WORKFORCE DEVELOPMENT ACROSS STAKEHOLDER GROUPS



Collection & analysis of labour market data

Identify occupations & forecast changes to occupations

Identify the pathway through jobs within the Industry

Define national competency standards aligned to occupations

Establish Industry credential requirements

Set and promote national standards

Design and support career pathways programs

School transition to tertiary learning pathways

Integrated education & training to meet the Industry's needs through work-integrated learning & work experience

Aligned Industry pathways (multiple entry/exit points)

Contextualise learning, use of technology, immersive learning & experience

Stackable educational training options (CPD, industry certifications, microcredentials), qualifications, degrees

Supportive services

SUPPORTING CAREER DECISIONS

Purposefully designed workforce systems and programs provide reliable and practical support to guide people through career transitions, from school to work to retirement.

By working together, stakeholders ensure the support offered is tailored to meet the needs of individuals throughout career transitional stages and is responsive to the evolving needs of the labour market.

This collaborative effort results in a more dynamic and flexible workforce that is better equipped to navigate the challenges of the modern economy.

This paper discussed "Understanding the Audience". Support for decision making will build on the information identified through understanding the audience. This includes clarity and transparency around career pathways linked to skills attainment and recognition of skills. By way of example see the *Six Stages of Career Development* applied to Surveying career progression on the following page:



Six Stages of Career Development for Surveying career progression

Modelled on 6 Stages of Career Development: Gary Burnison, CEO Korn Ferry

Entering the industry		Establishing career pathway		Maturing career future	
Follower	Collaborator	Instructor	Manager	Influencer	Leader
Entry-level - Gain work experience & employment		Becoming established Employment	Career growth / Senior professional or Business owner		
Yr 12, first-year University or TAFE	Graduate	2-5 years working	5-8 years working	9+ years working	12+ years working
First job or work experience.	First job with deeper exposure to the industry.	Using people skills to give instructions to your team.	Managing larger teams and higher-value projects.	Transition from managing a team to influencing a team and/or business.	Empowering and inspiring others across your organization and industry.
Action-oriented and task-focused as you carry out what others instruct you to do.	Working closely with others. Developing technical skills.	Provide guidance to a team. Deeper responsibility may work in a matrix team model.	Over-see more complex projects and have oversight of budgets, deeper use of technology and how it is applied.	Key leadership role impacting future projects and the performance of a business.	Leading and supervising a business. Entrepreneurial skills as a business owner.
Types of Surveyor Occupations					
Surveying Field Hand	Surveyor's Assistant Graduate/ Associate Surveyor Survey Technician	Surveyor non-licensed (Land, Engineering)	Surveyor Manager GIS Data manager	Licensed Surveyor (Land & Mine) Specialised Surveyor (Hydrographer & Geodesist) General Manager Business Owner	

Designing career pathway programs and talent attraction campaigns to reflect the motivations and decision-making processes is becoming more prevalent across many Industries.

There are many resources available to help guide people through their career development journey such as *Study Work Grow* and *Year13* for school students and for adults, the Australian, State and Territory Governments provide extensive support.

Career guidance and pathways often present a range of tools and services to support suitable candidates on their career journey. For those interested in pursuing a career in Surveying, organisations such as *Surveying Taskforce* (known as *A Life Without Limits*) and *Surveying Careers* provide information on the Industry and work experience opportunities for school students. Other organisations provide unique, immersive experiences for school students such as *SheMaps* and *A Class of Your Own* through their *Design Engineer Construct* programs.

Shaping career pathways and talent attraction strategies to align with decision-making processes enables greater relevance of content and context. When people think about their career choices, they usually consider various factors and aspects such as:



CONSIDERATIONS WHEN MAKING CAREER DECISIONS



What are your interests?

- What do you enjoy doing?
- What do you enjoy learning about?
- How do you like to spend your time?
- Do you enjoy manual activities or mental activities?
- Do you enjoy being outdoors or indoors?



What are you good at?

- What subjects do you excel at?
- What activities are you good at?
- What do you feel most confident about doing?



What are your values?

- What is most important in your life?
- What are your priorities in life?
- Where do you find meaning?
- What legacy would you like to leave?



What are your motivations?

- Flexibility?
- Salary?
- Career growth opportunities?
- Life-long learning?
- Work/life balance?



What are your long-term plans?

- Where would you like to see yourself in 10+ years time?
- Do you want to own your own business?
- Do you want to be a Manager in a business?



What industries interest you?

- Do you like science-based industries?
- Do you like operational-based industries?
- Do you like fast-paced industries?
- Do you like slow-paced industries?

MARKETING AND ENGAGEMENT

Strategic marketing is crucial to promote Surveying Profession careers in the Geospatial Industry, it helps to create awareness and understanding of the profession's importance and potential opportunities.

By strategically targeting the right audience and channels, marketing can effectively communicate the value of surveying and its relevance to a wide range of industries, ultimately increasing the demand for surveying professionals.

Develop a brand and engaging content for multiple mediums

Deliver targeted advertising including digital platforms and traditional media

Build partnerships with Schools and Tertiary Institutions

Support & promote apprenticeships, cadetships, internships, work experience

Leverage Industry Associations to reach larger audiences

Highlight Industry innovations and excellence

Use role models as Industry champions

MARKETING CHANNELS

There are several effective channels to market careers in Australia. The most appropriate channels vary depending on the industry, the target audience, and the job positions you are trying to fill. Some effective channels to market careers in Australia include:

Job Boards: Online job boards are one of the most popular channels to market careers. Some of the most popular job boards in Australia include Seek, Indeed and CareerOne.

Social Media: Social media platforms like LinkedIn, Facebook, Twitter and Instagram can be effective channels to market careers. Industry associations and employers can create job postings, share company news and engage with potential candidates through these platforms.

Employee Referral Programs: Employee referral programs can be an effective way to tap into a company's existing employee network to fill job vacancies. Offer incentives to employees who refer successful candidates to encourage them to participate in the program. This can be a mechanism to promote a profession and increase visibility.

Recruitment Agencies: Recruitment agencies can help promote Surveying professionals in their efforts to find qualified candidates for in demand job vacancies.

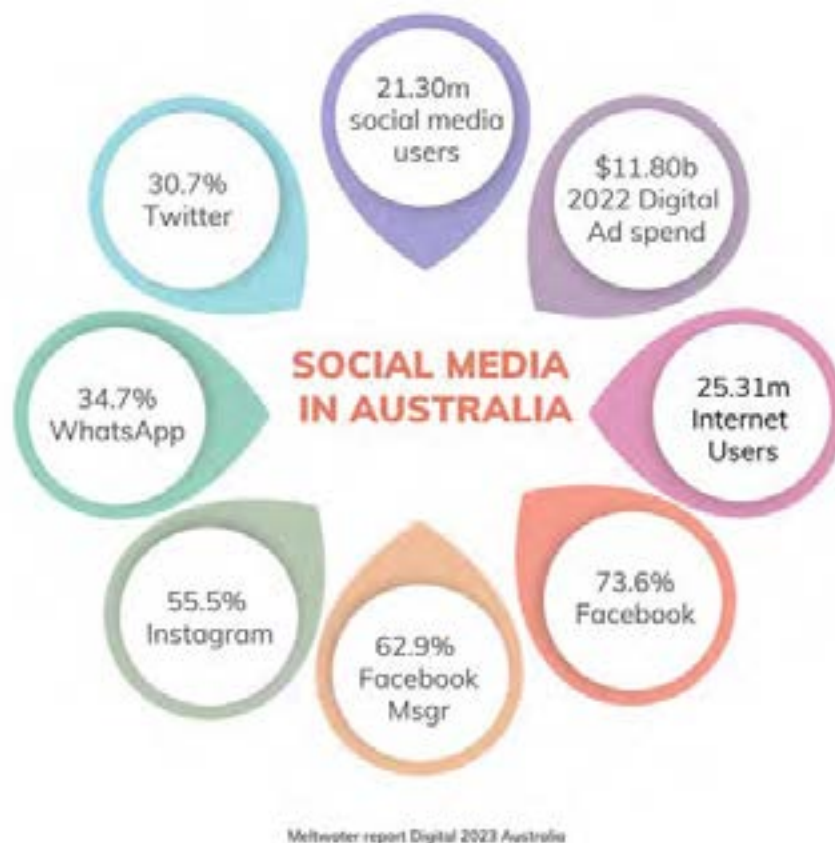
Career Fairs: Career fairs are events where employers can meet potential candidates in person. These events can be an effective way to showcase your company and job opportunities to a large audience.

Employers' Websites: One of the most effective ways to promote the range of opportunities the Industry offers is through employers' websites. Wherever possible employers should have a careers page that includes job listings, company culture information and an easy-to-use application process.

Industry Associations: Industry associations are a strong channel to market careers. They provide several benefits to promoting career opportunities. They provide benefits to professionals and offer community engagement activities. They provide skills development programs and can connect employment opportunities and individuals.



Once the audience has been identified, it's essential to carefully choose the appropriate channels to reach the target audience for marketing campaigns to have the maximum impact. It's crucial to assess this regularly and adjust the content strategy accordingly.



Social media is an essential channel to reach audiences. In 2022 there were 21.30 million social media users in Australia with an average digital advertising spend of \$11.80b. Facebook is currently the leading social media platform with 18,500,000 monthly active Australian users.

Strategic marketing and communications play an important role in promoting the Geospatial industry and attracting top talent to Surveying careers.

This rapidly growing field offers a wealth of exciting opportunities, but without effective marketing, they will go unnoticed.

Effective marketing emphasises the **cutting-edge technologies** and tools used in this field, showcasing the technical skills and expertise required to excel as a Surveyor. By highlighting the innovative use of geographic information systems (GIS), remote sensing, virtual reality, digital twin, BIM and 3D modelling, marketing can attract individuals who are eager to use technology to solve complex problems and drive positive change.

By strategically showcasing the diverse range of industries and applications that Surveying encompasses, marketing efforts can raise awareness of the importance of this profession and the many career opportunities available.

Highlighting the real-world impact of Geospatial Industry technology and the critical role of Surveying professionals can help to attract talented individuals who are passionate about making a difference.



NATIONAL CAREER PATHWAY DIAGRAMS

The diagrams in this guide map the national career paths for Surveyors in Australia. They include the education, training, and experience needed to advance in the profession.

The diagrams aim to present a simplified narrative to attract interest in the profession and provide a high-level guide to the steps to take to gain employment and establish a career.

Underpinning the diagrams is the tagline *Choose your adventure* to promote the richness of careers and lifelong career opportunities that are available for Surveyors in Australia.



DESCRIPTIONS OF DIAGRAMS - see diagrams as attachments to this paper

Diagram 1 What is Geospatial and Surveying

A flyer to introduce the Geospatial Industry and the occupation of Surveyor and how they are connected. This flyer is inspired by work produced by Project Sirius.

Diagram 2 Occupational Venn Diagram

This diagram aims to solicit interest by attracting people through different paths. It presents Surveying occupations 'measurers' as being varied and connected to the analysts 'ists' that rely on the data produced by Surveyors. The 'measures' and 'ists' are intersected by geospatial technology used by Surveyors to attract those motivated by technology. This diagram was modelled on a New Zealand diagram titled "The Great Tribes of GIS" by Nathan Heazlewood.

Diagram 3 What does a Surveyor Do?

An infographic presenting Surveying specialisations as adventures.

Diagram 4 Things Surveyors Do

This diagram presents a range of tasks undertaken by Surveyors. This is modelled from CRSBANZ National Competency Standards Tasks of Surveyors. It can be used to enable engaging discussions with teachers, parents and employers on opportunities based on the range of activities Surveyors undertake and be align with subjects being taught and technology used.

Diagram 5 Surveying: Choose your Adventure (a) & (b)

These diagrams present the rich variety of activities and environments in which Surveyors work and are inspired by collateral designed by the Surveying Taskforce and Surveying Careers.

Diagram 6 Your Pathway to Being a Professional Surveyor

An infographic presenting a 5-step process to become a Professional Surveyor. It is intended that the user can imagine experiences and associate with opportunities across all 5 steps.

Diagram 7 Pathways into Surveying

Presents learning and career pathways into the Geospatial Industry. It aims to represent lifelong learning pathways for people across the Surveying occupations at all levels and presents Industry contribution to career transitional pathways.

Diagram 8 Surveyors Pathway Poster

A poster that presents an overview of learning and career pathways presenting Surveying specialisations.

Diagram 9 Surveyors Enable SDGs

This diagram presents the value of Surveyors as being essential to delivering the United Nations Sustainability Development Goals. It shows that Surveyors are involved in various aspects of sustainable development such as land management, urban planning, disaster management, environmental management and infrastructure development as a visual aid. It aims to attract those who make value-based career decisions and trigger a small insight to encourage them to look more deeply at Surveying as a career.

RECOMMENDED NEXT STEPS

The Geospatial Industry offers many opportunities for those interested in a Surveying career. Surveying is a prevalent role in this Industry, and it has many applications across different Industries, such as Environmental Science, Infrastructure, and Property.

To promote Surveying as an exciting career, it is essential to showcase the diverse range of industries and applications associated with the profession. This can be achieved through a comprehensive career approach that targets different groups, including school students and existing workers, and involves a multi-faceted marketing campaign.

To accomplish this, a three-phase approach is proposed. **Phase 1** involves building on the foundations of this project, setting measurable goals, and establishing frameworks for stakeholder engagement and implementation of career pathway systems and programs. **Phase 2** involves developing a deeper understanding of market needs and contextualising career pathway systems and programs accordingly. **Phase 3** involves transitioning to a fully accessible digital environment for the career pathway and programs, supported by digital marketing campaigns, strategic partnerships and sector-wide activations.

Continuous improvement is necessary to ensure that the messaging remains relevant and engaging. By following this approach, the industry will form approaches for greater collaboration to attract new talent and encourage existing workers to pursue higher positions, resulting in a more skilled and motivated workforce.



CONCLUDING STATEMENT

To effectively address talent attraction strategies, a single approach such as focusing on school students is not enough.

The complexity of societal and environmental factors that influence career interests require a comprehensive career development ecosystem that targets multiple stakeholder groups through various channels. The messages should be tailored to suit each target market, while also being simple and relevant to cut through messaging from competing industries.

Continuous improvement across all career development and talent attraction strategies is crucial to identify target markets, align messaging and drive greater market reach. In addition, the Industry should implement policies that support return-to-work parents, such as flexible work arrangements, job-sharing opportunities and mentorship programs.

By adopting a holistic approach to talent attraction strategies, the Industry can foster a diverse and inclusive workforce that drives innovation, creativity and growth.

The career pathway diagrams presented in this paper are the first step in presenting Surveying careers in a fresh and engaging way. However, it is essential to remember that these diagrams need constant review and contextualisation to keep up with the changing market needs and expectations.

To attract current and future generations, career pathways must be presented in a way that is both engaging and simplified. This will help individuals to better understand the process and the steps they need to take to enter and advance their careers in the surveying industry.

The diagrams are just the beginning. It is important to *continually improve and innovate* in presenting career pathways in the Industry to attract and retain top talent.

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<https://www.thesurveyorstrust.org.au>



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<https://www.wonderkarma.com>



Jan Hobson for your creative design concepts.

Transforming ideas into designs.

j@designsbyj.com.au

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*Thank you for your continued support in
our collective efforts to strengthen the
profile of the profession.*

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WHAT IS GEOSPATIAL AND SURVEYING?

Geospatial is a science that helps us understand the relationship between the community and world around us, so we can predict trends, patterns, improve lives and protect the environment. Many occupations make up the geospatial industry, such as surveying.

Surveyors are professionals who measure and map the world using cutting edge technology, software and equipment to determine the accurate position features of space, earth and waters.

WHAT MAKES A SURVEYOR UNIQUE? THEY...

- Discover new and innovative ways to solve problems with geospatial data.
- Take a 'big picture' or 'whole of part' approach to solve problems.
- Travel the world and get paid to do it.
- Link the digital world to the real world.
- Work with cutting edge technology across geospatial, space industry, land administration, maritime and energy sectors.
- See and understand the world in many geospatial dimensions.
- Are experts in the science of measurement to solve real world problems like boundaries, tectonic plates and average sea level movements over time.
- Understand the ethics around the collection and use of geospatial data.
- Get paid to study.

SURVEYING CHOOSE YOUR ADVENTURE



If you like maths, the outdoors, travel, working with teams and solving unique problems with cutting edge technology, this is the career for you.

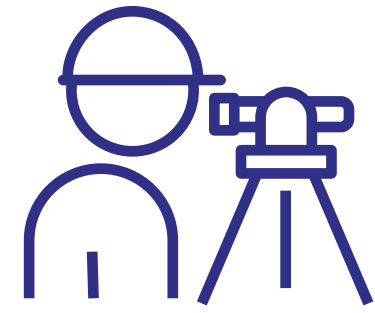


No two days are ever the same. Outdoors, team-based projects shaping the world.

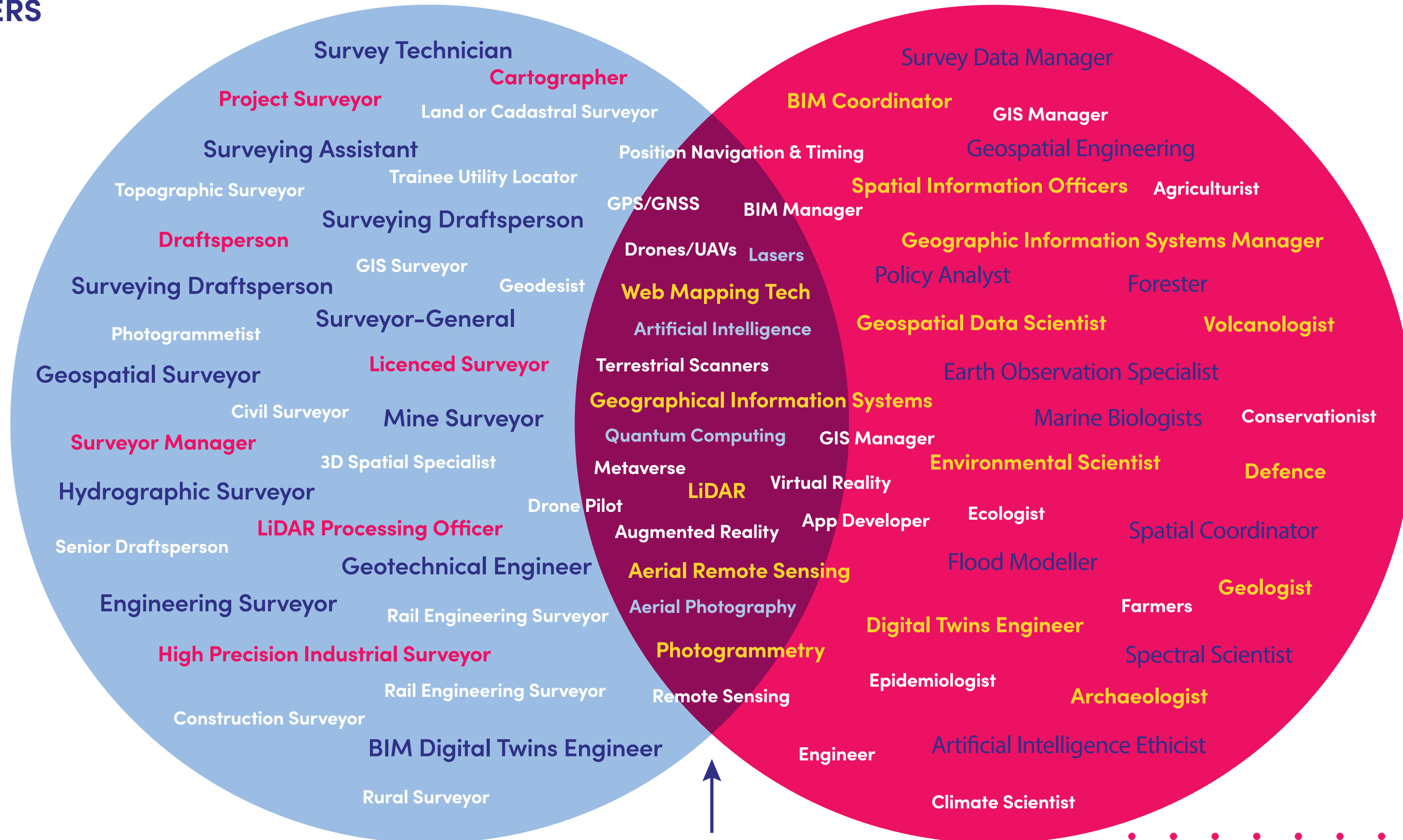
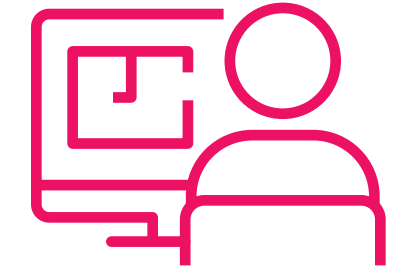
#SURVEYOR

YOUR CHOICE OF CAREERS USING CUTTING EDGE TECH

THE MEASURERS



THE 'ISTS'



THE TECHNOLOGY



WHAT DOES A SURVEYOR DO?

Surveying is the science involving the accurate determination of relative position points above, on and below the earth's surface. Important information that is used for the planning and efficient administration of the land, sea and any structure thereon.

Surveyors measure and map the world using cutting edge technology, software and equipment. They determine the most accurate position features possible of space, earth and water, then capture, analyse and interrupt that data.

CHOOSE YOUR OWN ADVENTURE THROUGH SPECIALISATIONS

ENGINEERING



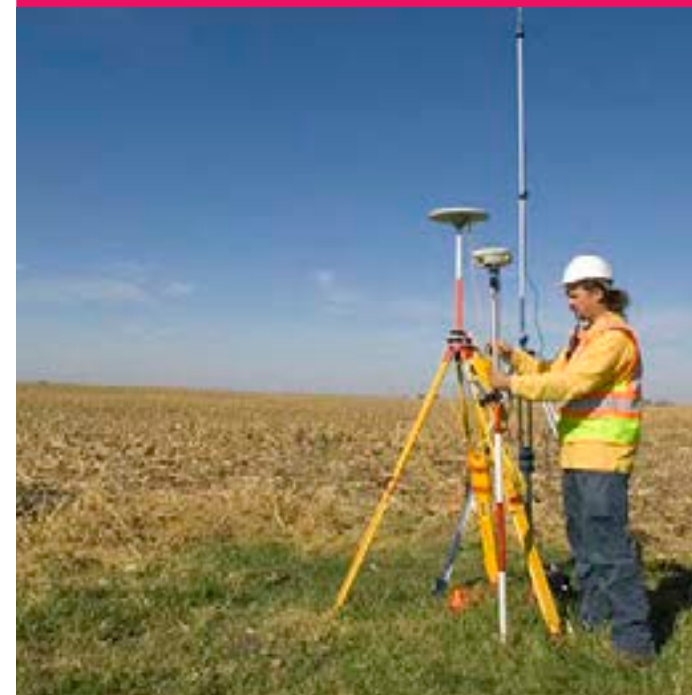
You play a critical role in the design and construction of bridges, roads, buildings, towns and cities.

RESOURCES



You make sure underground and open pit mines are accurate and safe.

LAND



You determine the re-establishment, identification or adjustment of land boundaries.

GEODESY



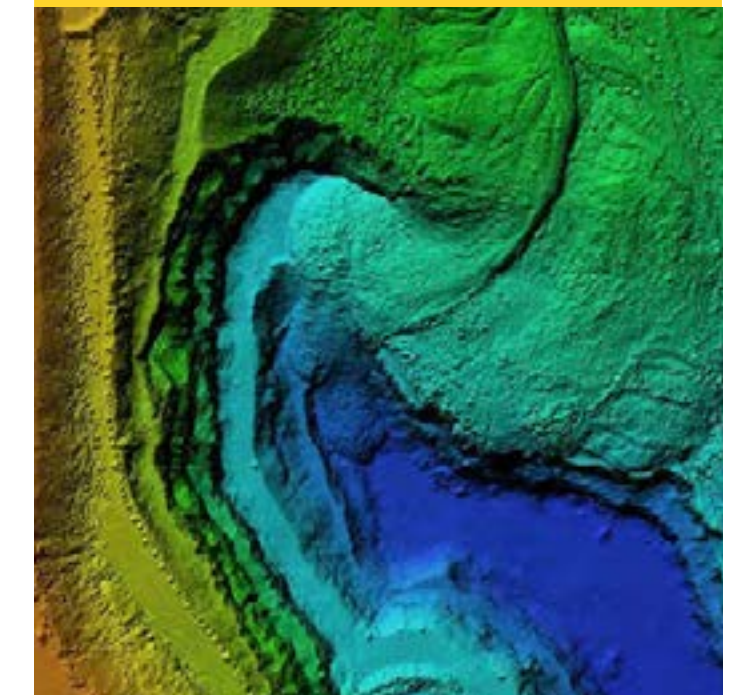
You measure and understand the Earth's geometric shape and size, location in space and gravity.

HYDROGRAPHY



You protect the oceans and contribute to the blue economy, map the sea floor, help mitigate flooding, use sonar tech and even work on shipwrecks.

PHOTOGRAMMETRY



You use aerial photography to create photorealistic 3D images of earth's surfaces.

THINGS SURVEYORS DO



1. EARTH'S POSITION POINTS

Determine position points of interest on the earth's surface and turn information into digital form.



2. PICTORIAL REPRESENTATIONS

Prepare plans, maps, charts and drawings to create pictorial representations and use geospatial information systems.



3. RESEARCH AND DEVELOPMENT

Undertake R&D of surveying and photogrammetric measurement systems, cadastral systems and land information systems.



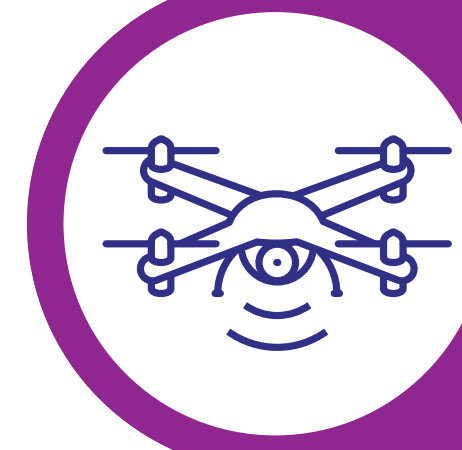
4. ADVISE SPECIALISTS

Provide advice to town planners, lawyers, architects, engineers, environmental and other scientists on the technical requirements of surveying, mapping and geospatial systems.



5. GATHER AND INTERPRET DATA

Compile and interpret data, and codes of practice. Write reports on survey measurements, land use and tenure.



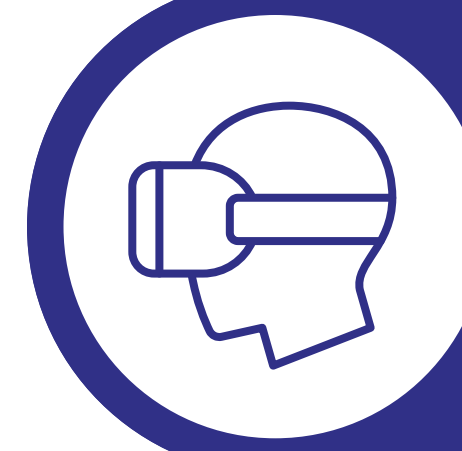
6. MAKE SENSE OF GEOSPATIAL DATA

Evaluate, compile and maintain spatial information using a range of digital and graphical materials, including aerial photography, satellite imagery and historical data.



7. ANALYSE

Use geographical information systems to analyse and interpret data to design maps, graphs, plans, drawings and 3D models to create digital twins. Also involves use of AI, VR and AR.



8. SHAPE FUTURE TECHNOLOGY

Develop and trial new technology and software for use in geographic information systems for many user groups such as the space industry, agri-tech and maritime.

SURVEYING CHOOSE YOUR ADVENTURE

BUILD CITIES AND
TOWNS OF THE FUTURE



USE CUTTING EDGE
TECHNOLOGY



MEASURE ICE FLOWS



DETERMINE WHERE
PIPES GO



MAP MINES FOR
PRECIOUS MINERALS



MEASURE SEA FLOORS



SURVEYING CHOOSE YOUR ADVENTURE

PRESERVE CORAL



EXPLORE THE DEEP OCEANS



MAP LAND



ENJOY OUTDOORS
AND OFFICE LIFE



BE ADVENTUROUS

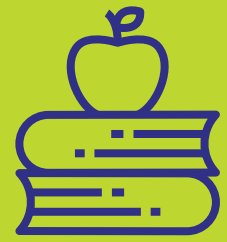


BE PART OF A TEAM



CHOOSE YOUR ADVENTURE

YOUR PATHWAY TO BEING A PROFESSIONAL SURVEYOR



1

SCHOOL

- Complete year 12.
- Choose STEM subjects (like maths, physics, design and technologies, science, geography, English, engineering).
- Get work experience!
- Learn more about the industry.

DEVELOP YOUR SKILLS AND KNOWLEDGE

- Undertake your education and training. Get qualified through TAFE (6 months-1 year) or University if you want to specialise (3-4 years).
- Secure a job and deepen your engagement and knowledge of the industry.

2



ESTABLISH YOUR NETWORK

- Join a professional body and attend events. Get a mentor and as much exposure to the industry as possible.

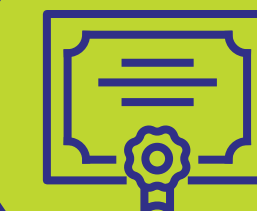
3



4

ENHANCE YOUR CAREER PATH

- Build on your skills and experience.
- Develop your career growth throughout your life's journey. Whether you are a return-to-work parent, a career changer seeking new adventures or you've figured out this is the right path for you, continue to skill, reskill, upskill and cross-skill to stay current and relevant.



5

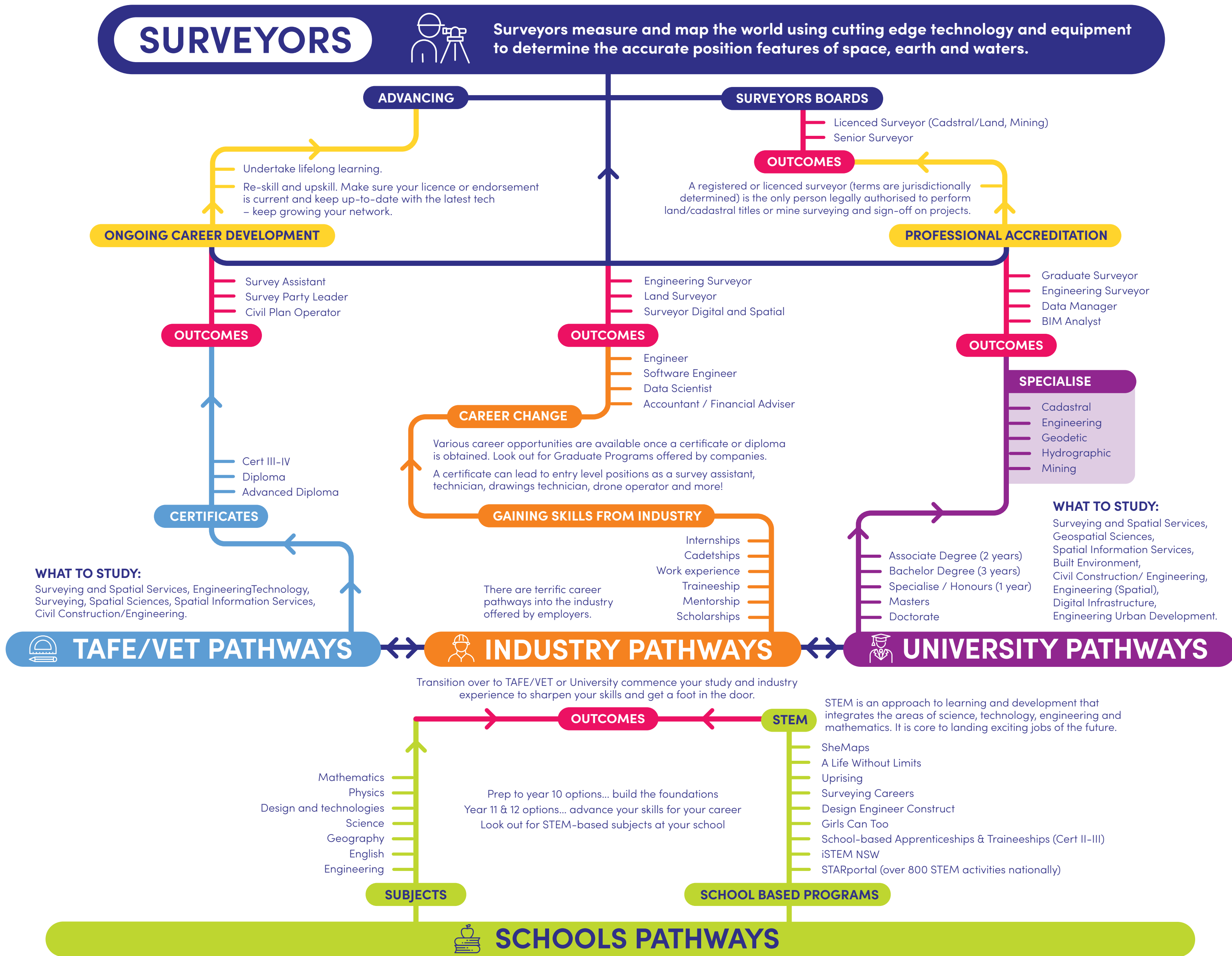
GET YOUR PROFESSIONAL CERTIFICATION

- When the time is right and you have the experience, work with your Surveyors Board and undertake a Professional Training Plan. Build your experience and get your professional accreditation to practice.

PATHWAYS INTO SURVEYING

What makes surveying so unique?

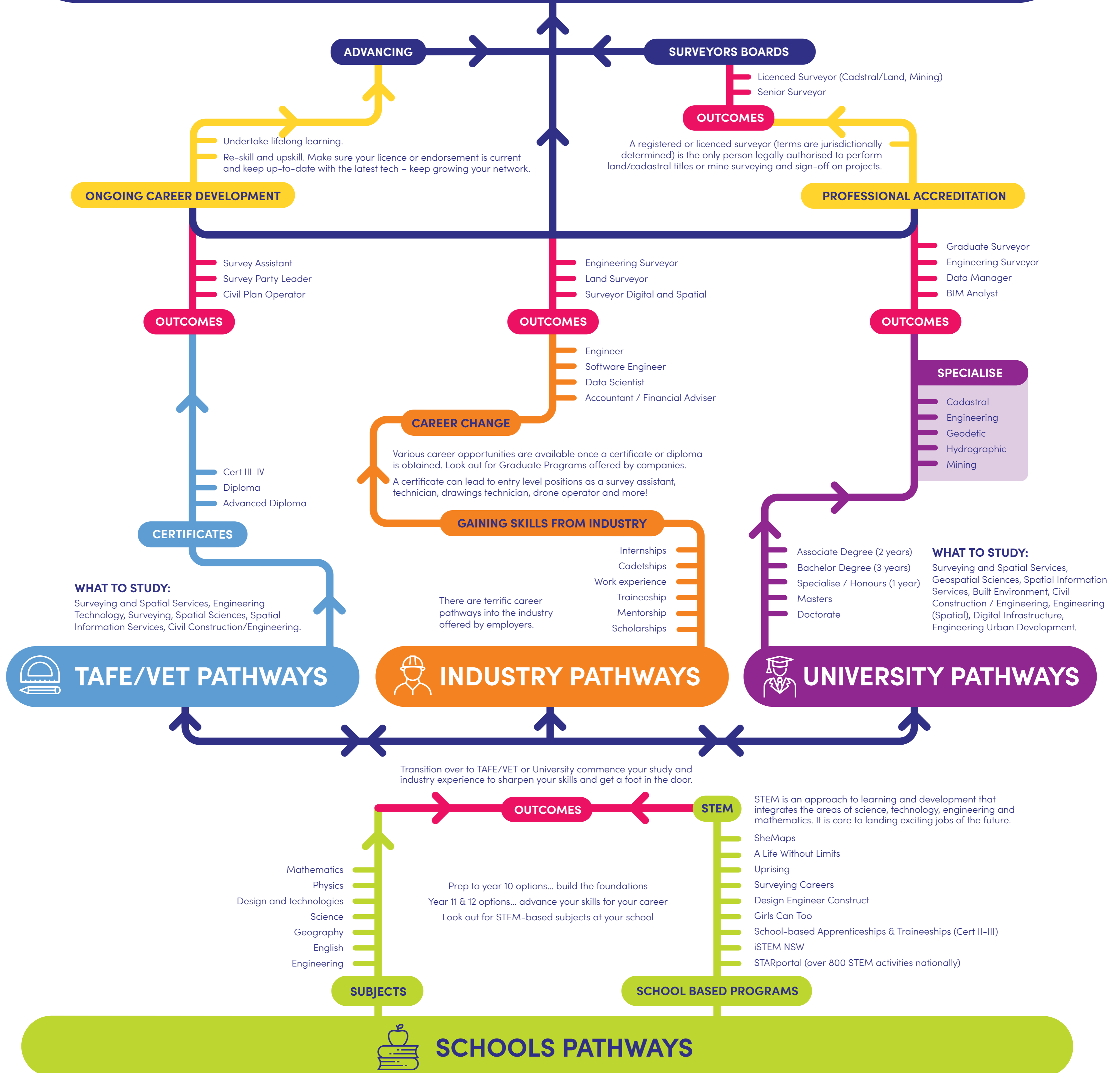
Surveyors play a central role in shaping the world we live in. It's hard to find another career that allows you to facilitate change for the betterment of lives globally across so many disciplines.



SURVEYORS



Surveyors measure and map the world using cutting edge technology and equipment to determine the accurate position features of space, earth and waters.



ENGINEERING

You play a critical role in the design and construction of bridges, roads, buildings, towns and cities.

RESOURCES

You make sure underground and open pit mines are accurate and safe.

LAND

You determine the re-establishment, identification or adjustment of land boundaries.

GEODESY

You measure and understand the Earth's geometric shape and size, location in space and gravity.

HYDROGRAPHY

Oceans are critical to climate change, protecting the oceans, measure sea level rises, contribute to the blue economy.

THE PATHWAY TO YOUR SURVEYING CAREER



SURVEYORS ENABLE THE DELIVERY OF SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY 	2 ZERO HUNGER 	3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION 	5 GENDER EQUALITY 	6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY 	8 DECENT WORK AND ECONOMIC GROWTH 	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES 	11 SUSTAINABLE CITIES AND COMMUNITIES 	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION 	14 LIFE BELOW WATER 	15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS 	17 PARTNERSHIPS FOR THE GOALS 	