



Integrated solutions for the Oil & Gas Industry

ENGINEERING AND ENVIRONMENTAL SERVICES FOR OIL & GAS





Connections you can count on

We recognize that your oil and gas project's needs are varied and complex, and we believe the best solution is to choose a consultant who understands these challenges and will work in partnership with you to creatively and efficiently implement solutions. We pride ourselves on being recognized for providing comprehensive services to the North American oil and gas industry. With decades of experience, Stantec offers a wealth of technical knowledge and a strong understanding of federal, state, and local regulations. Our team specializes in life-cycle engineering and environmental services for the oil and gas energy industry. From planning and siting to operation and maintenance and ultimately decommissioning and restoration, Stantec offers a single-source consultancy to bring your project from concept to completion.



The background of the page is a photograph of an office. On the left, a person is seated at a desk with a computer monitor. The floor is covered in a grey carpet with large, dark blue letters, including 'S', 'D', and 'C'. A solid orange rectangle is positioned in the bottom right corner of the page.

Health, **safety**, security, and environment

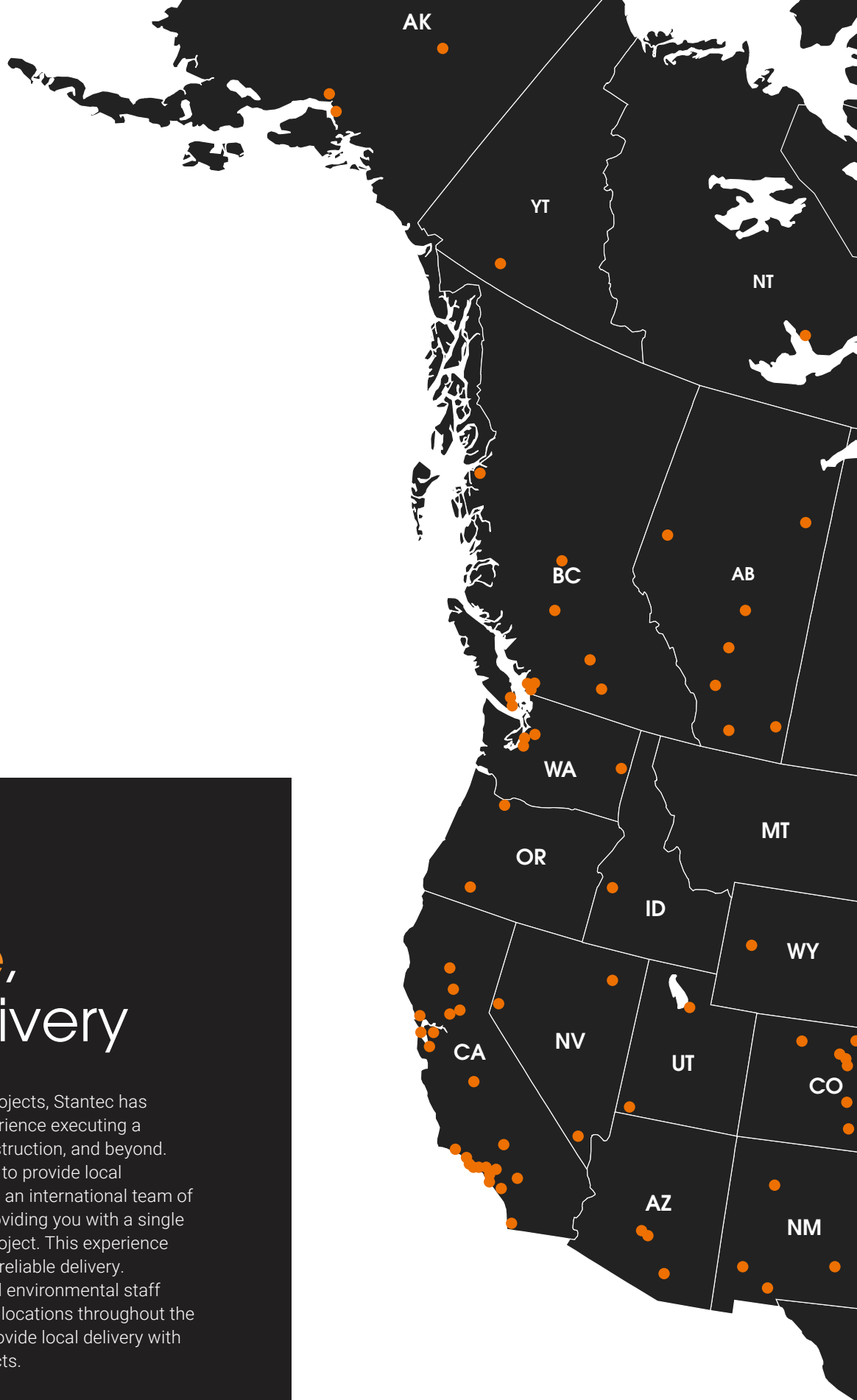
Stantec is committed to providing and maintaining an incident-free, healthy and safe workplace. At Stantec, we believe in doing what is right which includes sending our people home injury-free every day.

Our written behavior-based occupational safety and health program, Stantec's Health, Safety, Security, and Environment (HSSE) program manual is the cornerstone of our Health & Safety Management System. It outlines general employer and employee responsibilities related to health, safety, security, and the environment with more specific requirements and practices documented within our Safe Work Practices and Programs. Each employee is expected to comply with all of the requirements set forth in the HSSE program manual. Our behavior-based HSSE program is designed to provide all employees with guidelines and knowledge necessary to eliminate or reduce the risk of injury, illness, and damage in the workplace. This is accomplished through identification and evaluation of workplace hazards and taking action to manage the risks that arise in workplace operations (hazard recognition and control). Our HSSE program applies to anyone employed by Stantec including employees, consultants, contractors, subcontractors and suppliers who work on our sites.

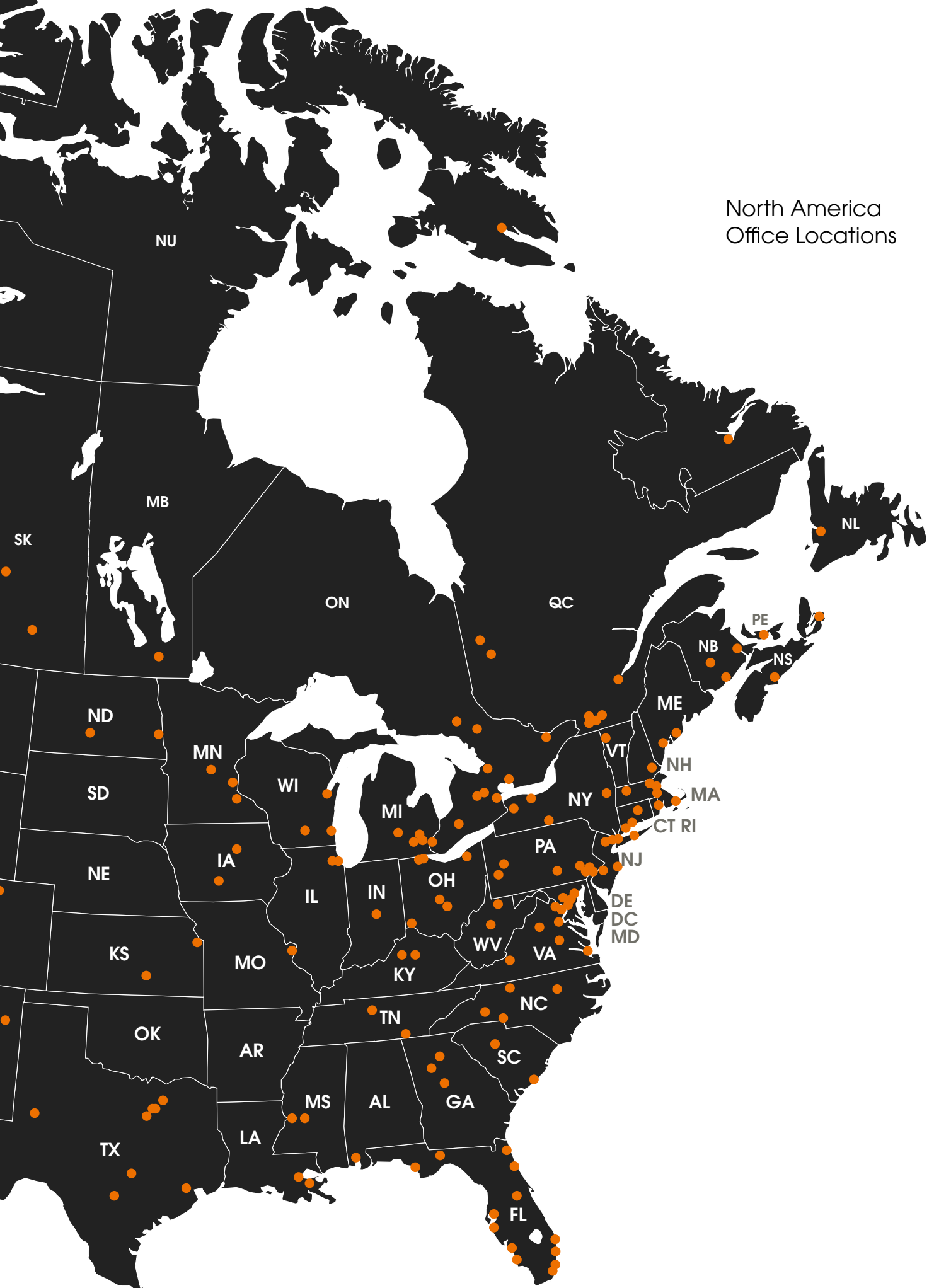
Additionally, employees must also follow the HSSE requirements specified by local legislation, clients, construction contractors, or others with responsibility for managing site and workplace safety. Stantec's HSSE management practices are based on OSHA's 18001 framework. We maintain formalized HSSE programs and policies that are set forth in guidance documents and include tools for implementation of our Safe Work Practices. Our HSSE program is designed to be dynamic to meet the evolving needs of our staff and clients.

National expertise, local delivery

When it comes to oil and gas projects, Stantec has unsurpassed capacity and experience executing a project from conception to construction, and beyond. What sets us apart is our ability to provide local understanding while drawing on an international team of experts from within Stantec, providing you with a single consultant for the life of your project. This experience provides consistent quality and reliable delivery. With over 3,500 engineering and environmental staff operating out of over 160 office locations throughout the US, our oil and gas team can provide local delivery with national expertise to your projects.



North America
Office Locations





Oil & Gas markets

ASSET INTEGRITY

- Facilities integrity
- Pipeline integrity
- External corrosion
- Internal corrosion
- Materials (including welding and fracture mechanics)
- In-line inspection services
- Fitness for service (Engineering assessments)
- Risk management programs
- Third party audits
- AC and DC interference mitigation

HEAVY OIL & OIL SANDS

- Sustaining capital/brownfield
- Greenfield and pilot projects
- Steam Assisted Gravity Drainage (SAGD)
- Mining
- Pipelines and gathering systems
- Well pads
- Infrastructure
- Steam injection: steam generators and steam distribution networks
- Diluents injection systems
- Oil & gas separation
- Water treatment

PIPELINES, FACILITIES, & TERMINALS

- 2–48 inches
- Multiphase
- Natural gas and liquids
- Carbon steel, HDPE, fiberglass, and composite pipeline
- Natural gas compressor stations
- Metering and regulating
- Natural gas storage surface facilities
- Liquid pumping stations
- Off-loading/loading facilities
- Process (sour & wet gas handling)
- Liquid Natural Gas (LNG) import/export
- Tank terminals
- Intermodal rail terminals
- Ports and marine terminals
- Bulk fuel terminals
- Tank design
- Custody management systems
- Meter and prover designs
- Vapor control systems
- Launcher/receiver trap designs



CONVENTIONAL PRODUCTION & GATHERING

- Greenfield wellsite tie ins
- Single-well batteries
- Multi-well batteries
- Brownfield
- Gas plant additions and optimization
- Gathering systems and compressor replacement projects
- Offshore production
- Pipeline facilities and terminals
- Gas processing
- Refining
- Asset integrity

GAS PROCESSING

- Inlet and sales conditioning
- Process
- Transmission
- Distribution and injection gas compression
- Vapor recovery units
- Gas dehydration
- Natural Gas Liquids (NGL) recovery and fractionation
- Gas sweetening and sulfur recovery
- Liquefied Petroleum Gas (LPG) storage and transfer systems
- Gas gathering
- Flue gas treatment and tail gas clean-up units
- Tail gas disposal

REFINING

- Hydrogen reformer
- Ultra low sulfur diesel
- Low sulfur gasoline
- Natural gas conditioning and pretreatment systems
- Plant process engineering
- Natural gas liquefier systems
- Storage tanks or vessels
- Loading systems (rail, truck, barge)
- Plant control and protection systems



Oil & Gas services at every stage

PLANNING & SITING

- Due diligence review support
- Critical issues analysis
- Regulatory planning and support
- Schedule and budget risk analysis and mitigation
- Stakeholder outreach
- Resource assessment
- Feasibility studies
- Risk analysis
- Preliminary site/array layout
- Facility siting and pipeline routing analyses

REGULATORY SUPPORT & PERMITTING

- Strategic regulatory facilitation
- Habitat and rare species surveys
- Cultural resource evaluation
- Biophysical assessments and surveys
- Visual impact assessment
- Project alternatives analysis
- Mitigation plans
- Federal, State/Provincial and local permitting
- National Environment Policy Act (NEPA) compliance documentation
- Public, agency, and Tribal/Indigenous consultations
- Expert testimony

DETAILED ENGINEERING & DESIGN

- Civil
- Structural
- Mechanical
- Geotechnical
- Grounding
- Electrical, DC and AC collection
- Instrumentation and controls
- SCADA
- Stormwater management
- Equipment selection
- Protection and control
- MV/HV substations
- Reactive power control
- Corrosion and integrity management
- Hydraulic modeling

PROJECT & CONSTRUCTION MANAGEMENT

- Construction monitoring
- Cost controls
- Scheduling
- Construction progress
- Independent engineering review
- Resource delineation
- Environmental compliance training and monitoring
- Regulatory agency coordination
- Habitat restoration
- Best management practice design



START-UP, COMMISSIONING, & TESTING

- System turnover and checkout functions
- Equipment, system, and plant testing
- O&M programs
- Performance testing
- Noise audits
- Hydrotesting management
- Post construction restoration

OPERATIONS & MAINTENANCE

- Natural resources management
- Operating permit compliance
- ROW vegetation management
- GIS infrastructure inventory
- Integrity management audits
- Pipeline inspection support
- Natural Resource Damage Assessments (NRDA)
- Emergency response
- Remediation

DECOMMISSIONING & ASSET RECOVERY

- Asset evaluation and recovery
- Decommissioning strategy
- Decommissioning permitting
- Decommissioning and demolition design
- Construction management and support
- Restoration
- Post-decommissioning Monitoring

5

Centers of Design Excellence

Our offices are integrated, using consistent standards, procedures and frameworks to produce project deliverables

\$250M

In cost savings and value

Through value engineering, we've identified more than \$250M in cost savings for our clients

NO.12

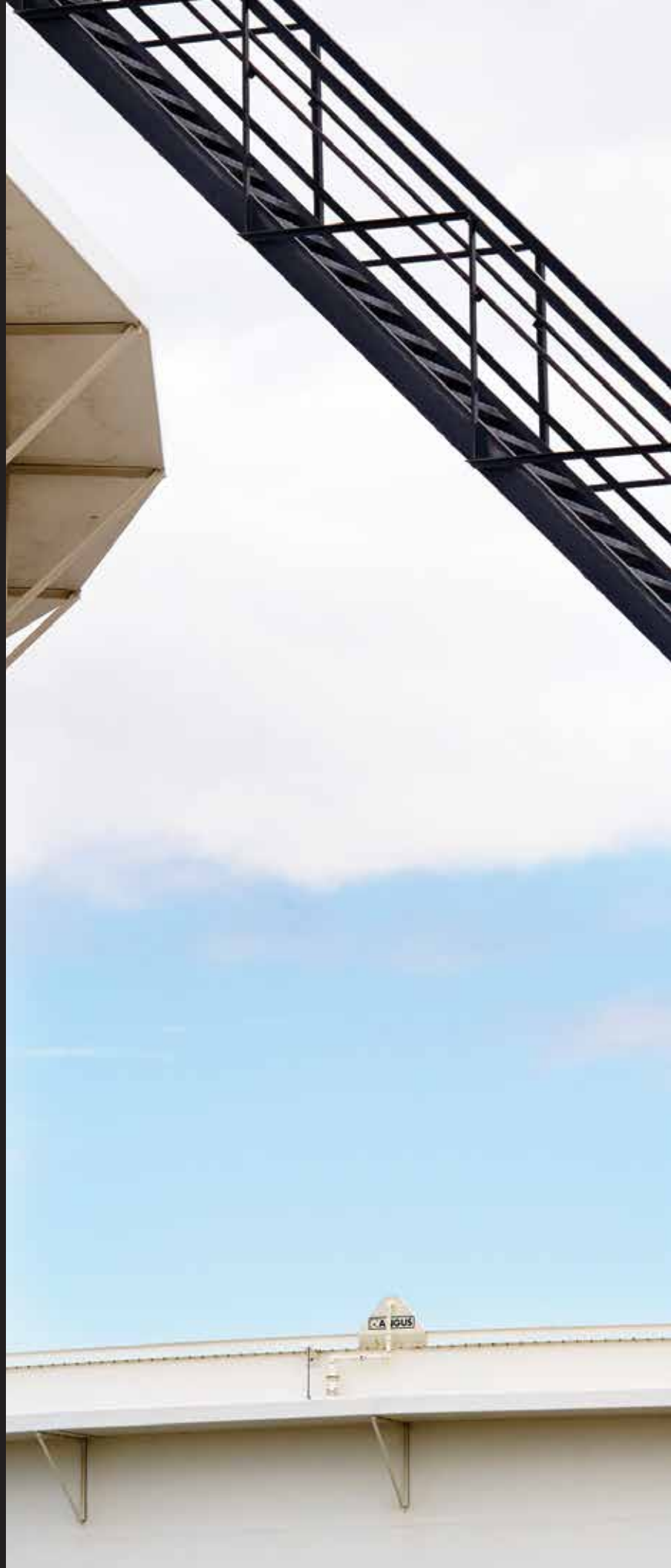
Top 50

Design Firms in Petroleum - Pipelines,
ENR, December 2018

5200+

Projects

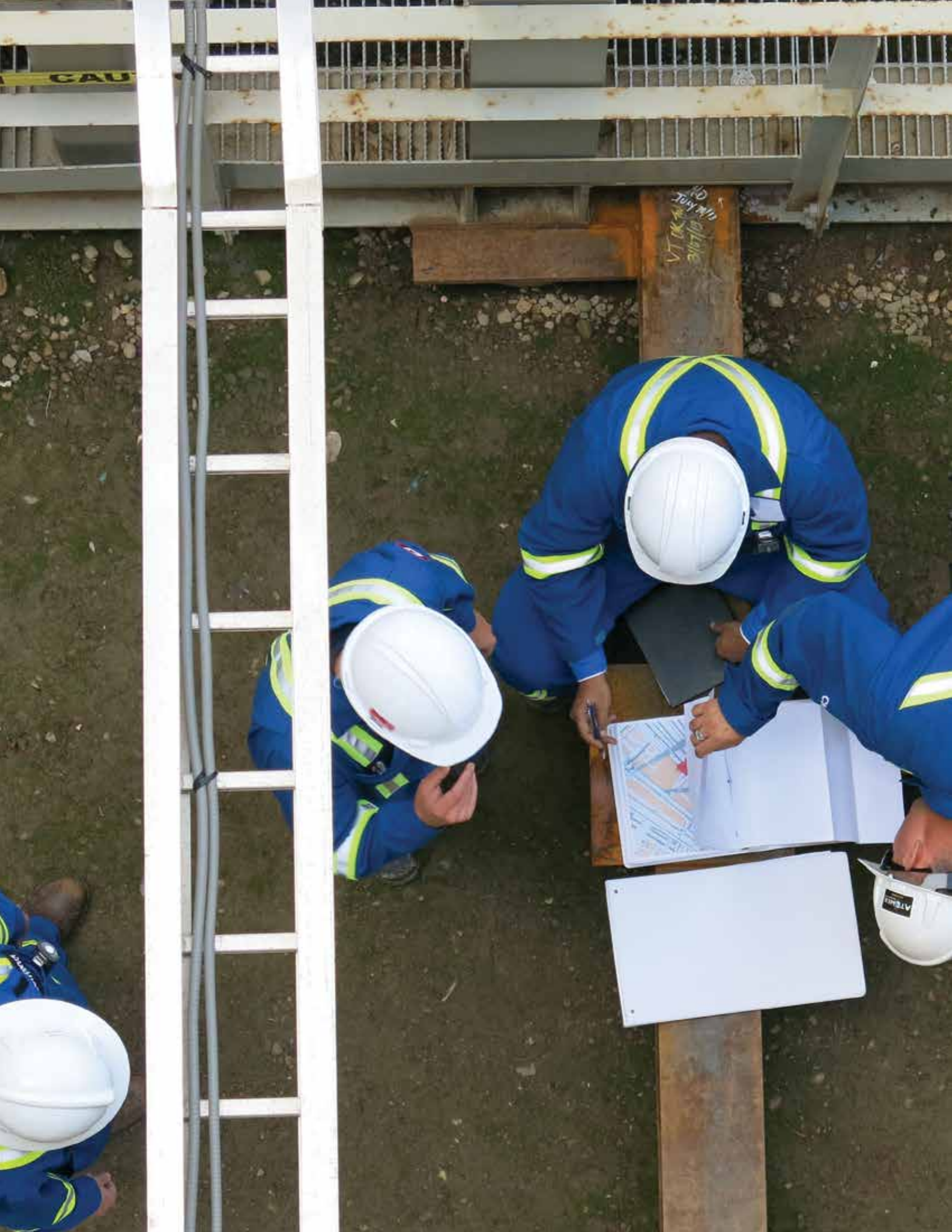
In 2018, we completed more than 5200 projects in the oil & gas sector — large, small and everything in between



Engineering, Procurement, Construction Management (EPCM)

With more than 800 engineering, procurement, and construction management personnel, we design facilities, pipelines, terminals, and refineries as well as processing plants and field facilities. Our team is integrated - using consistent standards, procedures, and frameworks to produce project deliverables. We create project teams to suit your needs, considering the project location and the most qualified resources from FEED to detailed engineering and construction.







Conceptual, basic and detailed engineering and design

We offer the complete range of engineering services including process, mechanical, electrical, civil, structural, and instrumentation and controls disciplines. We have the technology, design approaches, codes and standards you expect. Whether you're creating a new asset or optimizing your existing operations, our team will work with you from conceptual engineering through to front-end and detailed design. But the difference in working with us is that we also have the detailed knowledge, background, and context to bring you fresh and creative ideas that are grounded in practical, proven, cost-effective and solutions.

Our reputation is one of delivering innovative and practical designs that contribute to the overall long-term success of each asset we engineer and design.

- Process
- Mechanical
- Piping
- Electrical
- Civil
- Instrumentation and controls
- Structural
- Stress
- Materials specialists

Procurement

Combining industry best practices and unique project requirements, Stantec's Supply Chain Management (SCM) team benefit our clients in maintaining technical and quality requirements while focusing on Total Cost Ownership (TCO) and maintaining schedule. Stantec's SCM team will perform work in accordance to your policies and procedures. SCM can easily integrate client requirements. This includes the use of a client's P2P, ERP system, or other policies and procedures.

- Procurement management
- Vendor qualification/selection
- Datasheet development
- RFI/RFP/RFQ management
- Purchase order management
- Materials management
- Expediting/logistics
- Vendor/shop/field inspection
- Controls and reporting
- Procurement document controls
- Materials receiving
- Bid management
- Buying
- Expediting
- Negotiating
- Bid conditioning
- Commercial evaluation matrix
- Contract administration
- Inventory control



Focused on the long-term relationships we have with our clients and the value that stems from repeat business







Construction management and inspection

We take an unconventional approach of building constructibility into design, which is proven to not only save time and cost, but to reduce field rework. Our construction management team executes various projects utilizing construction industry experts to support any construction technology, either in a full Stantec construction management team approach or in support of your operations team with construction site services.

- Constructibility reviews
- Construction execution plan development
- Quality assurance and material management plans
- Safe work and emergency response plans
- Transportation accommodation plans
- Contract strategy development
- Engineering work package/construction
- Work package development planning
- Modularization planning
- Execution strategy development
- Risk management
- Construction schedule development support
- Site services planning and support
- Prime contractor role and responsibility
- On-site construction supervision
- General site administration
- Vendor and fabrication inspection
- Field verification/records management
- Pre-commissioning /commissioning support
- Ongoing contractor coaching

25+

years in the industry,
minimizing impact
and maximizing
benefits.

150

Environmental Services offices

Our offices are integrated, using consistent standards, procedures and frameworks to produce project deliverables

\$150M/Year

In services to the Energy Industry

The oil and gas sector is our largest market served

NO.7

Top 200

Environmental Firms
ENR, August 2018

3300+

Projects

In 2018, we completed more than 3300 Environmental Services projects in the oil & gas sector



Environmental Services

With close to 2,900 environmental professionals across North America, we provide turn-key environmental services at oil and gas facilities, pipelines, tank and LNG terminals, and refineries as well as processing plants and oil field, marine, and rail loading facilities. We provide life-cycle services from natural resource assessments and permitting, construction management/monitoring, remediation and asset retirement. Our team specializes in the environmental regulations and policies that affect the oil and gas industry. With a variety of in-house environmental specialties, we create project teams designed to meet the challenges of our clients' regulatory and risk objectives.





30K+

miles/50,000 km of
planning, assessment
and permitting of
pipelines in Canada
and the United States



Planning and permitting

At Stantec, the planning and permitting of oil & gas pipelines, facilities, and lease areas is a core service. We understand that strategic project planning, collection of appropriate baseline data, and focused regulatory submissions are critical to obtaining cost-effective and timely regulatory approvals. We take the time to understand our clients' approach to project development and tailor our approach to their unique needs. Our staff members include professional natural resource scientists, engineers, environmental planners, cultural resource specialists, GIS specialists and regulatory specialists with the technical expertise and experience needed to successfully permit new project construction. We do so efficiently and effectively throughout North America and internationally.

We provide:

- Regulatory analysis
- Routing and siting alternatives analysis
- Risk analysis and mitigation
- Regulatory strategic planning, support, and facilitation
- Stakeholder involvement
- Public meetings, open houses, and workshops
- Federal, state, and local permitting
- NEPA studies and compliance
- FERC traditional and pre-filing 7(c), 7(b), prior notice, blanket certificates
- Air permitting, air quality and climate change
- Threatened and endangered species surveys
- Wetlands and waterbody surveys
- Cultural resource surveys
- Construction environmental inspection
- Geotechnical investigation and planning
- Impact mitigation design
- GIS and information management
- Expert testimony
- FEMA floodplain permitting
- Post-construction restoration planning
- Third-party support

Operational compliance

Stantec provides multi-media environmental compliance services for operating oil & gas facilities throughout North America. Our focus in oil & gas provides in-depth experience in the federal and state regulations that effect our oil & gas clients. From oil & gas fields to refineries and LNG facilities, we understand the regulatory requirements and challenges our clients face.

We provide:

- Stormwater Pollution Prevention Plans (SWPPP)
- National Pollution Discharge Elimination System (NPDES) permits
- Spill Prevention Control and Countermeasures plans (SPCC)
- Facility Response Plans (FRP)
- Air quality construction and operating permits
- National Emission Standard Benzene Waste Operations Standards (NESHAPS)
- Greenhouse gas emissions calculations & reporting
- Air quality modeling & monitoring
- High Consequence Area (HCA) analysis
- Pipeline and Hazardous Materials Safety Administration (PHMSA) compliance
- Environmental compliance training and monitoring
- Multi-media compliance audits
- Post-construction environmental compliance and restoration



2000+

media environmental
compliance audits and
operating air permits in
over 40 states and all
Canadian provinces





Trusted

media environmental
compliance audits and
operating air permits in
over 40 states and all
Canadian provinces



Remediation, response, and asset repurposing

Stantec has been assessing, remediating and restoring environmental liabilities for our oil & gas clients for over 40 years. From assessing and remediating environmental liabilities to managing some of the largest oil spills in the industry to restoring sites to their natural state, our team has the experience and expertise to efficiently manage and reduce your environmental liabilities. Stantec's multi-disciplinary team of geo-scientists, hydrogeologists, toxicologists, risk assessors, engineers and regulatory specialists work closely with our clients to provide solutions that meet their objectives and requirements, while closing sites at the lowest lifecycle cost.

Stantec's Emergency Planning and Response discipline includes over 750 trained, qualified, and experienced staff servicing clients on emergency responses throughout North America. This roster gives Stantec the capacity to not only respond rapidly to a release anywhere in North America, but also allows us to support larger and longer lasting events, when multiple shifts, positions, or rotations must be staffed. Our Emergency Planning and Response teams are focused on reducing or eliminating our client's liabilities rather than just being an Emergency Response contractor.

Stantec's multi-disciplinary brownfield redevelopment practice works closely with our remediation practice in supporting repurposing of underutilized, closing, or abandoned assets. Our team of remediation engineers, land development engineers, planners, construction managers, and economists provide expert risk and financial analysis for asset closure, decommissioning, restoration and repurposing/re-use.

- Mergers and acquisition due diligence
- Site investigation
- Risk assessment
- Remediation
- Geomorphology
- PFOS/PFAS
- Ecosystem restoration
- Geotechnical
- Multi-site portfolio liability management
- Emergency planning
- Emergency response
- Natural Resource Damage Assessments (NRDA)
- Waste management
- Asset decommissioning
- Site restoration
- Brownfield redevelopment

Communities are fundamental. Whether around the corner or across the globe, they provide a foundation, a sense of place and of belonging. That's why at Stantec, we always **design with community in mind.**

We care about the communities we serve—because they're our communities too. This allows us to assess what's needed and connect our expertise, to appreciate nuances and envision what's never been considered, to bring together diverse perspectives so we can collaborate toward a shared success.

We're designers, engineers, scientists, and project managers, innovating together at the intersection of community, creativity, and client relationships. Balancing these priorities results in projects that advance the quality of life in communities across the globe.

Stantec trades on the TSX and the NYSE under the symbol STN. Visit us at stantec.com or find us on social media.



Design with community in mind