

— Resilient solutions since 2002 —

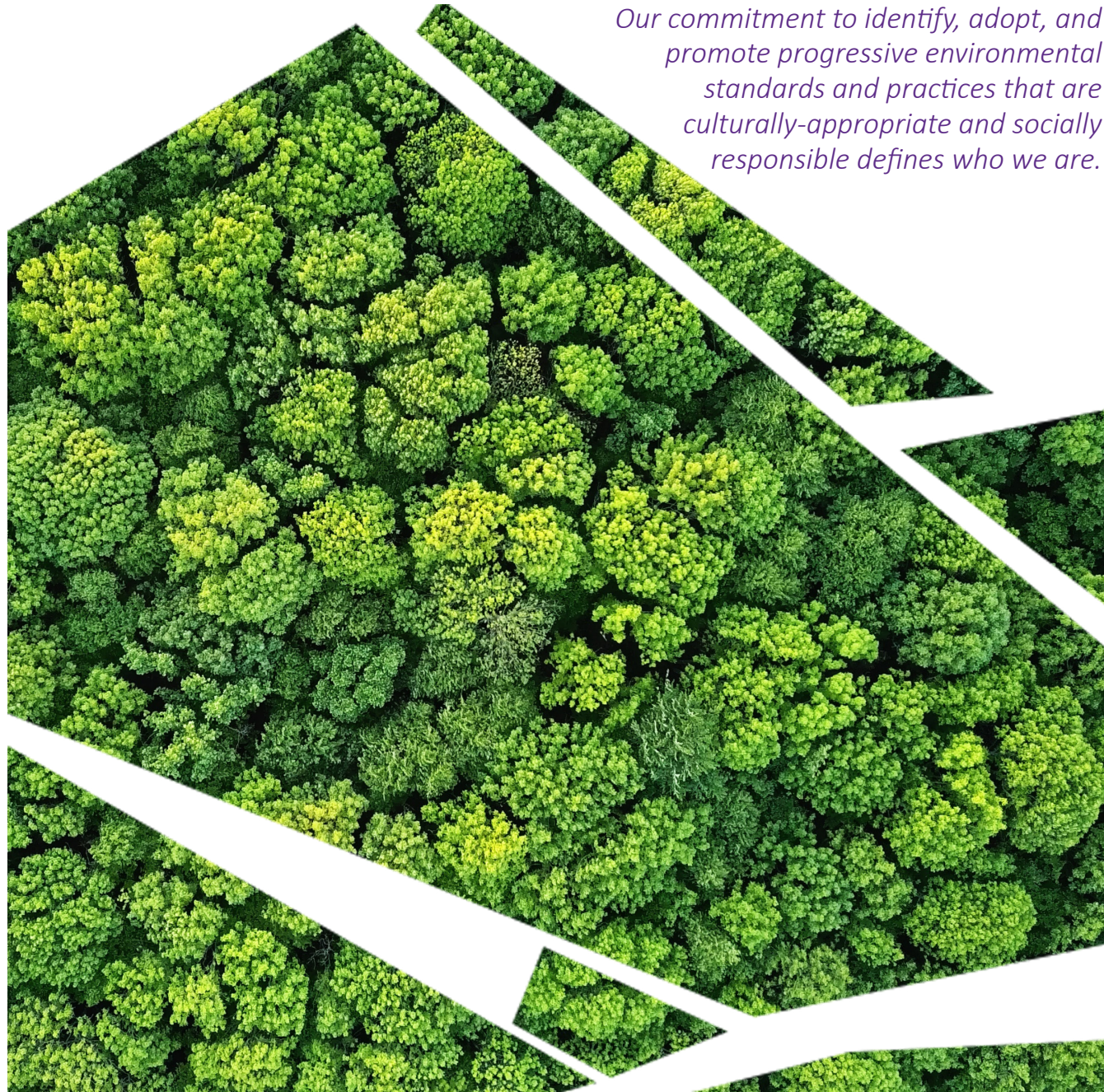


## ENVIRONMENTAL CONSULTING FROM SEA TO STARS

Woman-owned, HUBZone, Small Business







*Our commitment to identify, adopt, and promote progressive environmental standards and practices that are culturally-appropriate and socially responsible defines who we are.*

## MESSAGE FROM THE PRESIDENT

### ***Identifying opportunities to mitigate risks that are not readily apparent***

At Marstel-Day, we believe that promoting the public interest and protecting our finite natural resources are integral and fiscally-smart business practices, both domestically and internationally.

We take a proactive approach to solving environmental and institutional management challenges in measurable ways that integrate the perspectives of people, their cultures, and impacts on the environment. Sustainable practices are vital to reduce environmental impacts, but work is also needed to restore the ecological vitality and diversity that supports all life on our planet. Marstel-Day is committed to creating solutions that improve ecosystem health as we continue our landmark work in natural resource conservation and land-use planning and management.

Our innovative, balanced approach to sustainable development and resource use is evident in our people - environmental practitioners, social scientists, economists, planners, and private-sector experts who deliver comprehensive and insightful work that creates lasting results and impactful returns for public and private-sector clients and communities, working towards a healthier and safer future. We strive to mitigate effects on vulnerable communities both nationally and internationally by pushing program boundaries, identifying needs, and branching into new areas that define the ecological intersection of land, water, energy-use, and population mobility to deliver fit-for-purpose solutions for our clients and beneficiaries.

As we work with host nation governments on their myriad of challenges, our goal is to help define and occupy the leading edge of this effort within our industry, to look beyond profit maximization, and to act in ways that create a positive impact not only on our employees but also on natural environment, stakeholders, and shared communities where we live, work, and on which we depend.



Rebecca Rubin  
President and CEO

*Rebecca R. Rubin is Marstel-Day's founder, President and CEO. She also serves as Chairman of the Board for the National Wildlife Refuge Association, which protects 850+ million acres of America's wildlife heritage. She was named by President Obama as a White House Champion of Change for Community Resilience and previously served (2014-2018) on the Commonwealth of Virginia's State Air Pollution Control Board by appointment of the Governor.*





## WHO WE ARE SNAPSHOT

### GSA Schedule

899-1: Environmental Planning Services and Documentation  
899-3: Environmental/Occupational Training Services  
899-7: Geographic Information Systems (GIS) Services

### NAICS Codes

541620: Environmental Consulting Services  
541320: Landscape Architectural Services  
541330: Engineering Services  
541370: Surveying and Mapping (except Geophysical ) Services  
541611: Administrative Management and General Management Consulting Services  
541690: Other Scientific and Technical Consulting Services  
541720: Research and Development in the Social Sciences and Humanities  
541990: All Other Professional, Scientific, and Technical Services

### DUNS Number

038090390

*\*We have Secret Facility Clearance and over 20 people with Secret clearance*

*Marstel-Day has worked in over 25 countries since 2002 and our staff have delivered activities in over 120.*



## FOOTPRINT WHERE WE ARE

We engage with local technical experts and deploy our own professionally diverse staff of anthropologists, archaeologists, researchers, analysts, planners, environmental scientists, natural resource manages, real estate experts, urban planners, political economists, security strategists, urban and environmental policy experts, and private-sector engagement specialists to deliver practical market-based solutions that address economic, environmental, and social needs; ignite opportunities; and advance the global good.

### Office Locations

Headquarters  
701 Kenmore Avenue  
Suite 220  
Fredricksburg, VA 22402  
T: +1 540.371.3338

East Coast  
1727 King Street  
3rd Floor  
Alexandria, VA 22308

West Coast  
804 Pier View Way  
Suite 206  
Oceanside, CA 92054

Gulf Coast  
1103 Balch Boulevard  
Stennis Space Center,  
MS 39529

## METHODOLOGY & APPROACH

# PERSPECTIVE

*Award winning,  
certified woman-  
owned, HUBZone,  
small business  
that has been  
providing excellence  
in environmental  
services around the  
globe for almost 20  
years.*

Marstel-Day is an environmental consultancy firm established in 2002 to provide expertise to public and private-sector organizations in the interrelated areas of climate, habitat, open space, water, resilient infrastructure/public-private partnerships and investment strategies, energy, land-use and other natural resource conservation issues. We provide clients with concepts, strategies and plans of action for landscape-scale conservation of natural resources, climate adaptation, energy planning and “net zero” resource use strategies, water security, smart growth and transportation, and the management of issues relating to encroachment pressures on government and private lands, open space, and habitat.

Since our inception, our team has grown from one person to over 80, comprised of a mix of staff and associates, in addition to consultants working on research and project activities all over the world and domestically. Our engineers, environmental specialists, planners, and social scientists are thinkers and strategists who skillfully combine strong analytical techniques with stakeholder outreach and engagement, to devise solutions to seemingly intractable issues for our clients at the national, regional, state, and local levels- leveraging public and private-sector partnerships and impact investments.

We deliver analytical research and services that identify gaps that are not readily apparent, based on ground-truth data, coupled with practical and cost-effective recommendations to mitigate against future impacts from economic, social, and environmental change.

***We prepare you for the future.***

# CLIENTS

## WHO WE WORK WITH

Clients benefit from Marstel-Day’s expertise in developing innovative and effective solutions to their intractable land-use, water, energy, or planning problems while enhancing the environment and permanently conserving natural resources and wildlife habitat. We have worked and collaborated with numerous multi- and bi-lateral donors, federal agencies, state and local government, host nations, defense agencies, non-profits, and organizations.

### Federal Agencies



### Department of Defense



### Host Nations



### Non-Governmental Organizations





# SECTORS

INDUSTRY EXPERTISE

*Marstel-Day provides rigorous analysis, data that is actionable and readily understood, and delivery of projects and activities across seven key sectors.*



10  
Climate Change



11  
Energy



12  
Environment



14  
Water



15  
Agriculture



16  
Cultural Resources



18  
Resilient Cities and Communities



# CLIMATE CHANGE

Our climate risk screenings and analyses can build a full profile of your geographic and organizational vulnerabilities, from coastal facilities threatened by sea-level rise to supply chains dependent on water availability in drought-prone regions. As part of our climate vulnerability assessments, we work with you to understand your position in the local community, from host country policies down to facility-level analyses.

Marstel-Day specializes in analyzing the connections your activities, projects, organization, and facilities have to stakeholders and external resources and drivers that are unique to your operations in any location.

Our climate adaptation methodology can be integrated into cross-functional assessments to fit naturally within your plans and processes and scaled to fit your needs and sphere of influence.

**WHAT WE'VE DELIVERED:**

- Climate Vulnerability Assessments
- Scenario Planning
- Climate Impact Studies
- Emergency Management Planning
- Spatial Risk/Impact Mapping
- Cost-Benefit Analysis
- Carbon Sequestration and Emissions Strategies
- Public-private Partnerships
- Corporate Sustainability
- Coastal Risk/Resilience Planning



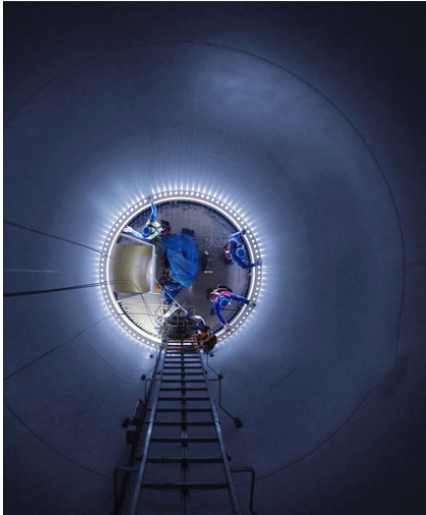
# ENERGY

Marstel-Day provides clients with a systems approach to renewable energy planning, development, and public-private partnerships. Our capabilities include assessing the suitability of renewable energy and energy-efficient technologies to replace or augment existing energy sources; conducting opportunity analyses; benchmarking current energy use; establishing metrics and tracking systems; and helping organizations achieve energy certification standards.

We work with key decision-makers and planners to facilitate discussions on optimal energy solutions that are feasible within established budgetary limits and sustainability goals. Additionally, we build engagement strategies that involve permitting and siting authorities and key stakeholders to ensure early buy-in, effective relationship building, and communication flow throughout the development process.

**WHAT WE'VE DELIVERED:**

- Energy Policy Analysis, Permitting, and Compliance Support
- Energy Independence and Security Studies
- Energy Efficiency and Water Conservation Facilities



*Energy compatibility and availability present a high-level encroachment challenge for many client locations. Identifying trends in these areas across multiple locations led Marstel-Day to assist the DoD with the establishment and execution of several renewable energy Mitigation Response Teams in coordination with our client's activities.*



To date, M-D has supported 30+ natural resource planning studies across the Asia/Pacific, including NEPA (EISs/EAs), wildlife and marine studies (biological assessments, surveys), and cultural resources projects covering operations at Wake Atoll, Guam, Hawaii, Japan, Johnston Atoll, Marshall Islands, Northern Mariana Islands, and South Korea.



# ENVIRONMENT

Our flagship service offering, Marstel-Day provides green consulting expertise to support and promote environmentally sustainable initiatives that protect and conserve resources while also promoting best use and smart growth. Our experts provide a balanced approach to environmental challenges, by utilizing strong skills-sets in social science, environmental science, land use and economics to accommodate multiple perspectives and the use of qualitative and quantitative analysis to inform findings and provide recommendations for greater impacts and improvement.

## WHAT WE'VE DELIVERED:

- Environmental Impact Assessments
- Environmental Compliance
- Environmental War-gaming
- Strategic Planning
- Remediation
- Strategic Environmental and Social Assessment
- Ecosystem Services Valuation & Trade-offs
- Payment for Ecosystem Services Schemes
- Environmental, Health, and Safety Analyses
- Forest Conservation/Sustainable Management Analysis
- Regulatory Compliance, Permitting, and Policy Analysis
- Natural Resources Planning, Management, and Restoration
- Endangered Species Management and Biological Assessments
- Wetlands Identification and Delineation
- Strategic Communications and Engagement
- GIS-based Mapping, Modeling, and Analysis
- Biological Assessments and Monitoring
- Ecological Modeling and Analysis
- National Environmental Policy Act Studies



## Environmental Remediation and Ecological Restoration

For contaminated lands, we work with clients to develop remedial actions that address cleanup requirements and support human health, while preserving and restoring natural resources. We use *Net Environmental Benefit Assessment* methodology to analyze risks and values of proposed remedial actions to inform decision-making and to design a cleanup and land transfer strategy.

We manage and restore natural habitats by developing natural resources management plans to control invasive plants/noxious weeds and to restore native plants in degraded habitats. We also create plans to restore degraded stream habitats and riparian buffers; reduce streambank erosion, prevent excessive sedimentation into waterways, and remove fish passage blockages, utilizing natural stabilization techniques, as viable, to restore stream form and function.

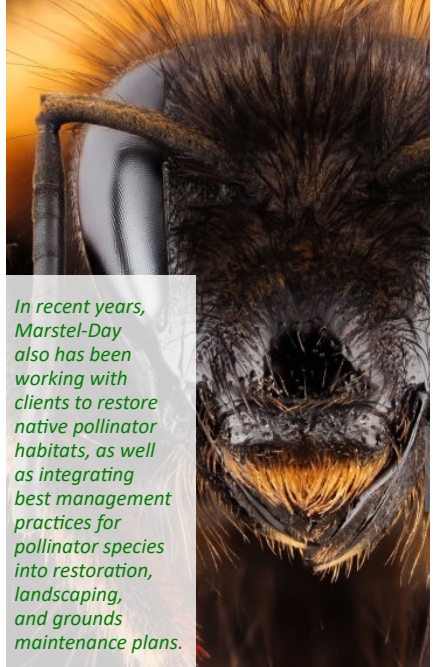
We also have significant experience designing and conducting long-term ecological monitoring projects, identifying ecological metrics to assess progress towards a desired condition, and managing natural resources databases.



## Natural Resource Management and Compatible Land-use

Our biologists, planners, and GIS specialists have completed hundreds of natural resource projects, specializing in landscape-scale conservation planning and supporting ecological studies. We provide analysis of land use laws, rights and management practices, grievance redress mechanisms, and the purchase or transfer of development rights for governments, NGOs, and the private sector. Our proprietary iterative models assess potential compatible land use threats; identifying parcels and land areas that provide opportunities to alleviate development constraints.

For the U.S. National Park Service (NPS), *we created a transformational impact investment framework and financing options for infrastructure* to improve resiliency, identify projects that demonstrate park infrastructure priorities, leverage public-private partnerships, attract outside investment, enhance long-term operational efficiency, and create cost savings.



In recent years, Marstel-Day also has been working with clients to restore native pollinator habitats, as well as integrating best management practices for pollinator species into restoration, landscaping, and grounds maintenance plans.

## Environmental Policy and Planning

We have interdisciplinary, professional experts in every technical field required to conduct environmental assessments and planning, and to support policy initiatives. *Our staff have prepared hundreds of planning and compliance documents and supporting studies, including over 50 Environmental Impact Statements (EIS) and 200 Assessments (EIA) for over 10 U.S. federal agencies.*

We use analytical tools to assess gaps, evaluate institutional capacity, and determine political and economic risks to further inform our findings. For example, our ecologists have conducted numerous biological survey and monitoring projects to provide necessary data (e.g., special status species surveys, invasive plant surveys, water quality monitoring) to support project planning purposes.



# WATER

Continued access to adequate water resources and the ability to deliver potable water efficiently are essential requirements for countries, missions, and the private-sector. Increasing demand for water places stress on the same finite supplies of water, further compounding these concerns.

Water resource stresses such as availability, quality, and access remain a challenge for sustainability planners in urban and rural centers. Marstel-Day conducts integrated water resources management (IWRM) and sustainment planning to provide a near-term (management) and long-term (sustainment) set of recommendations for nations, governments, organizations, and private-sector clients on water scarcity issues. Our rigorous analysis provides forward-looking strategic perspective on water resources management and aims to increase overall water security and resiliency by providing an assessment of current and future long-term threats to the water supply source, while simultaneously identifying current system deficiencies with regard to meeting community, regional, or installation/facility water requirements.

## WHAT WE'VE DELIVERED:

- Water Resources Management and Sustainment Plan (WRMSP)
- Water Governance and Political Economy
- Urban and Rural Water Supply and Distribution
- Modeling and Spatial Analysis
- Water Demand Forecasting
- Supply-Chain Analysis and Facilities Assessments
- Coastal Zone Management



# AGRICULTURE

Across North America and for over 14 countries in Eastern and Central Europe, Marstel-Day has undertaken national, regional, and local food systems analysis, examining environmental, social, economic, and political barriers/obstacles/challenges and opportunities to identify agriculture infrastructure and institutional gaps and vulnerabilities. We work in partnership with regional and national stakeholders on food, agriculture, climate, and other resiliency initiatives including a recent “Resilient Communities” “story map” initiative for the Inter-Mountain West to support increased dialogue about food security challenges, ongoing efforts, and future opportunities in the region.

Marstel-Day undertakes modeling and mapping efforts, in addition to analytical studies to ascertain climate change impacts on local food supplies and exports from threats posed by flooding, drought, over-development, and increasingly severe storms and storm surge. Our conservation experts understand the impacts of nutrient-rich management practices, no-til planting, and use of cover crops and low-demand water for irrigation. Additionally, we promote the use of conservation easements an adding in agri-tourism and community supported agriculture programs to the business mix in order to strengthen regional agriculture and local food distribution systems.

Our staff have experience working with the Center for International Forestry Research (CIFOR) and other international forestry resources and institutions on business modeling (e.g., for oil palm expansion in Indonesia) to support alternative livelihood practices. We also facilitate and establish partnerships with governments, civil society organizations, agricultural community programs, and distributors to prioritize local market suppliers and growers to maintain the economic viability of their farms and stimulates rural economies. We have supported agency initiatives to expand crop programs to include bio-feedstocks, creating new markets for wood slash and biofuel crops.

## WHAT WE'VE DELIVERED:

- Value-chain and Supply-chain Analysis
- Food and Fuel for the Forces (partnership between the USMC and N. Carolina Agricultural Community)
- Market Competitive Analysis and Research
- Compatible Farming and Forestry Uses
- Agricultural Assistance Programs





# CULTURAL RESOURCES

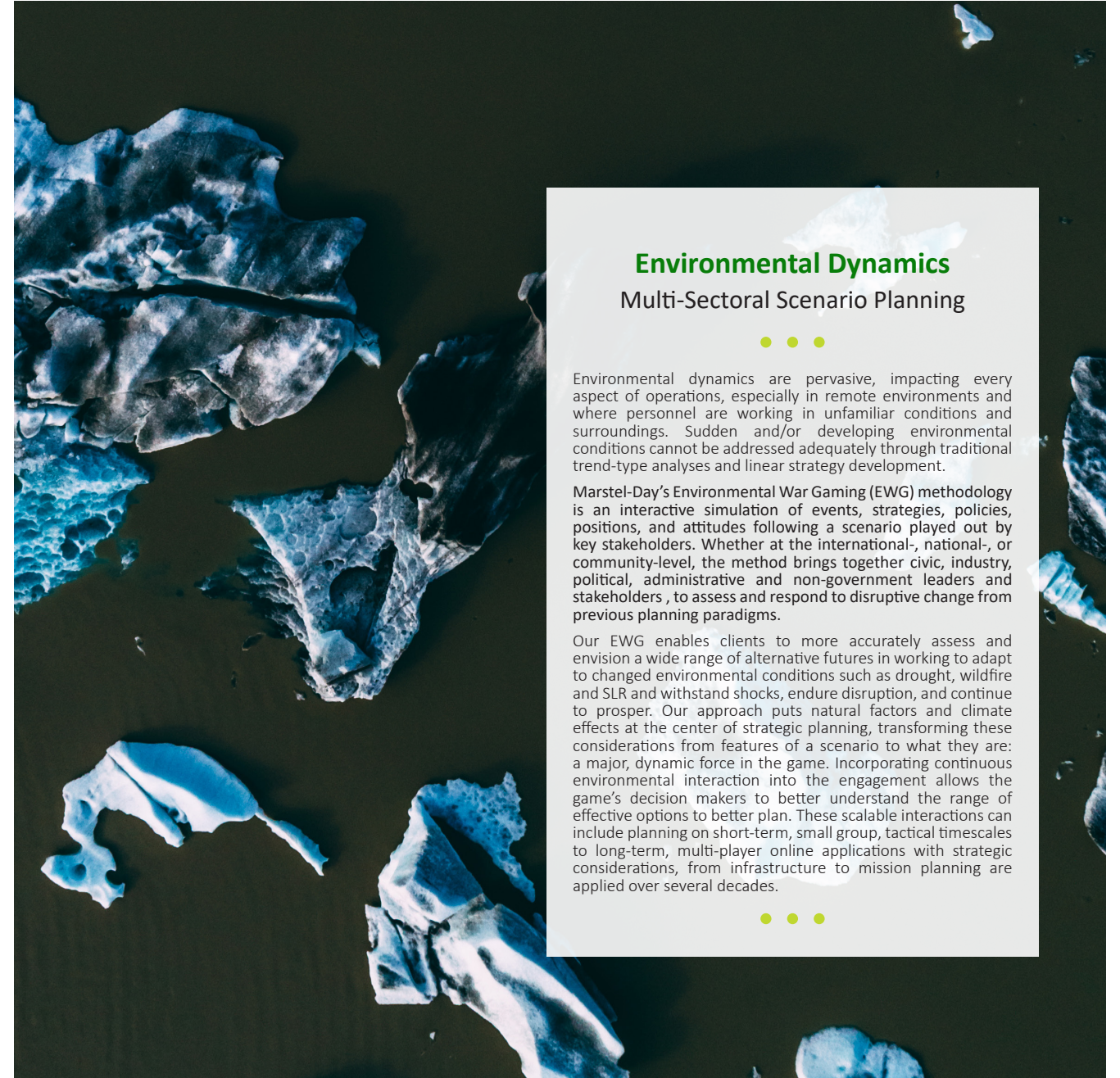
Marstel-Day's approach to development and engagement focuses on communication, stakeholder engagement, and culturally-appropriate and inclusive practices. We offer clients expertise in the delivery of cultural resource management plans tailored to service requirements, in compliance with security parameters, and confidentiality concerns that focus on conserving the past and proving solutions for the present. Our staff of cultural resources specialists, archaeologists, anthropologists, architectural historians, historic preservationists, and GIS specialists are academically trained social scientists that deliver impactful and actionable results in the field. We use a variety of stakeholder engagement and participatory planning tools, follow country IRB protocols for impact assessments, fluent in social and environmental safeguard policies and protocols for the IFC, World Bank, State and Tribal Historic Preservation Offices (SHPO/THPO), and facilitating American Indian tribal consultations.

We work collaboratively with our clients and beneficiaries to provide comprehensive community partnership plans and innovative products. Through expert community partnership facilitation practices, we construct a strong collaborative environment involving diverse groups of internal and external stakeholders. Our work supports our clients by identifying best practices and efficiencies that deliver lasting benefits to their bottom line.



## WHAT WE'VE DELIVERED:

- Agency, Stakeholder, and Tribal consultations
- Artifact Processing, Analysis, and Curation
- Integrated Cultural Resources Management Plans (ICRMPs)
- Land-use Histories and Mapping
- Gender Analysis and Assessments
- Social and Behavior Change Communication
- Social and Gender Inclusion Studies
- Public-Private (P3) Partnership Facilitation and Consensus-based Planning



## Environmental Dynamics

### Multi-Sectoral Scenario Planning



Environmental dynamics are pervasive, impacting every aspect of operations, especially in remote environments and where personnel are working in unfamiliar conditions and surroundings. Sudden and/or developing environmental conditions cannot be addressed adequately through traditional trend-type analyses and linear strategy development.

Marstel-Day's Environmental War Gaming (EWG) methodology is an interactive simulation of events, strategies, policies, positions, and attitudes following a scenario played out by key stakeholders. Whether at the international-, national-, or community-level, the method brings together civic, industry, political, administrative and non-government leaders and stakeholders , to assess and respond to disruptive change from previous planning paradigms.

Our EWG enables clients to more accurately assess and envision a wide range of alternative futures in working to adapt to changed environmental conditions such as drought, wildfire and SLR and withstand shocks, endure disruption, and continue to prosper. Our approach puts natural factors and climate effects at the center of strategic planning, transforming these considerations from features of a scenario to what they are: a major, dynamic force in the game. Incorporating continuous environmental interaction into the engagement allows the game's decision makers to better understand the range of effective options to better plan. These scalable interactions can include planning on short-term, small group, tactical timescales to long-term, multi-player online applications with strategic considerations, from infrastructure to mission planning are applied over several decades.



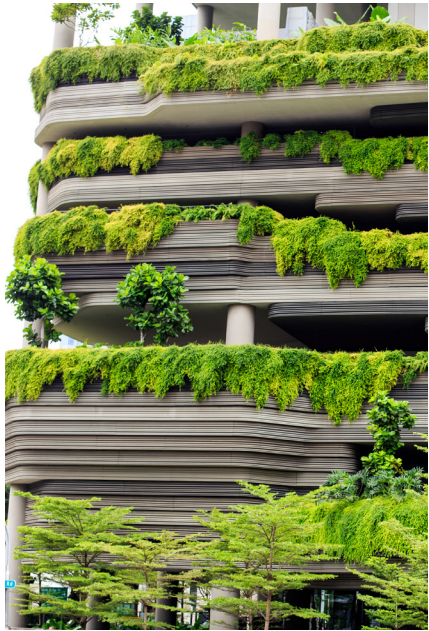


# RESILIENT CITIES AND COMMUNITIES

Resiliency for urban cities and rural communities must focus on the capacity of individuals, communities, institutions, businesses, and systems within these communities to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience. We help countries, cities, and communities prepare for risks, reduce cost, increase return on investments, and improve security.

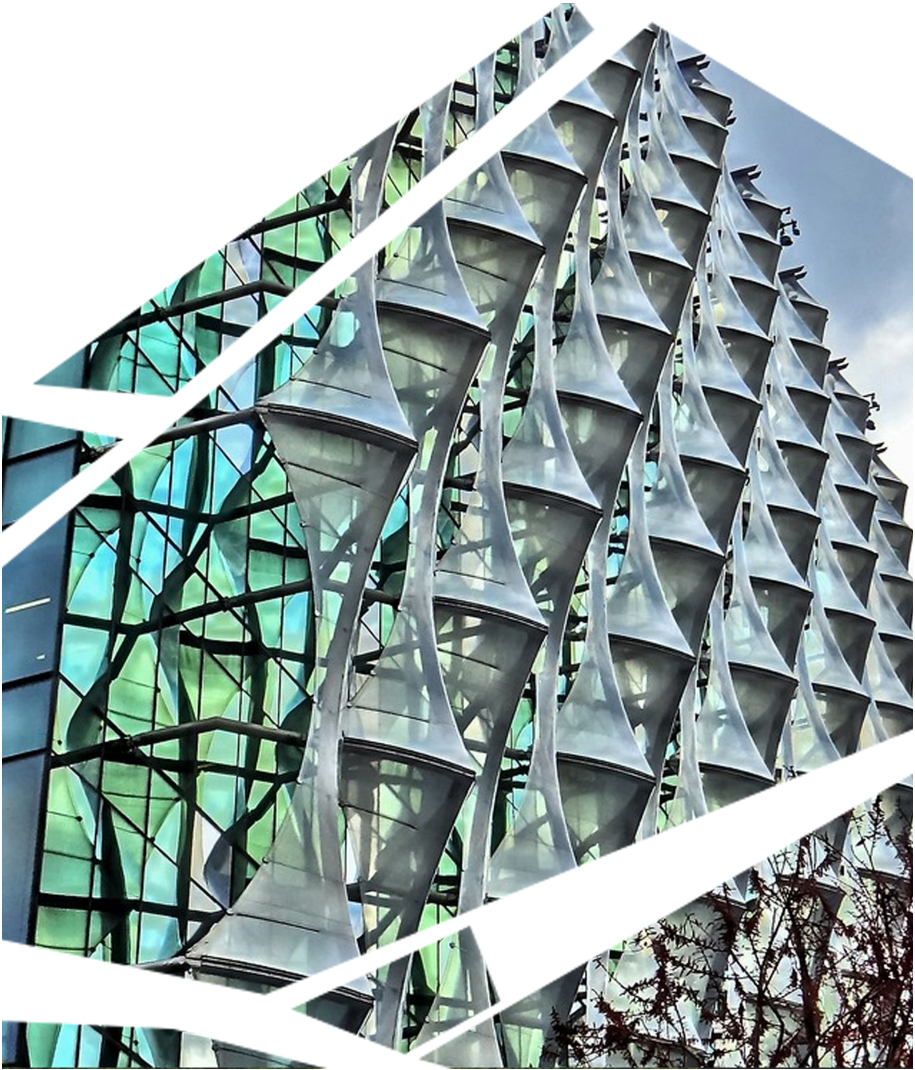
Marstel-Day has designed resilience tools that provide rich information to inform decision-making processes and promote improved community engagement and understanding. We use scenario planning with rapid visualization of alternative, data-driven outcomes to help users understand local hazard risks, costs, and potential for community response. We implement cost-benefit analysis, conducted climate change risk and vulnerability assessments, develop GHG inventory and mitigation plans, devise energy and water security initiatives, map supply-chain dynamics, and devise encroachment plans for our federal, public and private-sector clients that are targeted and comprehensive.

*For rural communities* we have developed a step-by-step framework for addressing climate-related impacts such as increased wildfire, drought, excessive heat, urban heat islands, and other extreme weather events. Our Toolkit significantly improves rural community engagement to better understand climate vulnerability and the potential for customized responses to improve resilience. Compared to larger cities, research shows that rural communities often lack trust in climate science and are less likely to engage in adaptation efforts. Currently available tools are optimized for urban centers and use communication methods that do not effectively respond to the unique needs of rural stakeholders. This toolkit, however, uses proven communication and engagement pathways targeted to overcome barriers of rural users.



*For cities*, we use a multi-tiered approach to create infrastructure sustainment strategies for our clients. We take deep dives into national institution and planning agencies, ministries, and missions, and/or our clients’ organizations to assess their infrastructure management strengths and limitations. We review policies and investment strategies to help improve the operational value of agency assets, and to prioritize funding decisions.

Our studies identify methods to tap the equity value of land and facilities to support infrastructure improvements. We analyze opportunities to use energy savings performance contracts, utility system privatization contracts, and water conservation practices to reduce infrastructure costs and to support environmental sustainability goals. Our staff facilitate community partnerships to coordinate agency infrastructure support functions with state and local governments. We review installation plans to reuse developed sites for new infrastructure projects and to preserve green space. We identify loan, donation, and grant sources available to support agency infrastructure programs and we help clients to adapt other agencies’ programs to meet their needs and desired outcomes.



## WHAT WE’VE DELIVERED:

- Emergency Management and Risk Mitigation Plans
- Prescribed Burns
- Multi-Hazard Mitigation Plan
- Coastal Wetland Restoration Site Selection
- Coastal Zone Infrastructure Analysis
- Climate Vulnerability and Risk Planing
- Green Infrastructure and Climate Resilient Design
- Measuring and Mitigating Sustainability Risks
- Compatible Land-use Strategy (CLUS) Tool
- Disaster Risk Reduction (DRR)
- Resilient Communities Toolkit and Guide



# INTEGRATED APPROACH FIT FOR PURPOSE

*Marstel-Day recognizes that in order to deliver quality and impactful work, our approach must be integrated across sectors and fit for purpose solutions must be relevant and actionable for country, community, and situational contexts.*

## Comprehensive and Responsive Delivery

Our staff expertise is a purposeful blend of international and local academics and practitioners; social scientists, environmental planners, and political economists; that combine academic research with on-the-ground experience to deliver comprehensive results.

Crosscutting issues such as gender, youth, marginalized and vulnerable populations, stakeholder engagement, communications, poverty, access to resources, and governance are addressed through-out all of our work. Marstel-Day does not take a “cookie-cutter” or siloed approach to development. A comprehensive, holistic, and inclusive approach to the best way to achieve improved resilience and obtain sustainable outcomes - far outlasting the project life-cycle and looking towards a future of empowered and self-reliant emerging economies.

- **Foster the Enabling Environment.** We identify policy, legal, and regulatory reforms that are necessary at a national and/or regional-level to create an enabling environment that promotes and builds resilience.
- **Support Knowledge Management and Facilitate Capacity Building.** We advance host government, client, and organizational access to culturally appropriate and digestible information that is actionable. We identify capacity requirements at the individual and institutional-level to act on available information for improved decision-making.
- **Leverage and Promote Resilient Communities.** Greater resilience is achievable when you engage all stakeholders - leveraging public-private partnerships and community partnerships in order to address environmental and conservation challenges. Through expert community partnership facilitation practices, we construct a strong collaborative environment involving diverse groups of internal and external stakeholders for solution-oriented outcomes.



## Fit for Purpose Solutions

Building on our integrated approach to development, Marstel-Day staff deploy fit-for-purpose analytical tools that provide strong evidence-based data that is academically grounded, field-tested, and results-oriented. We utilize several tools and methodologies favored by USAID, MCC, and other development partners, as well as private-sector and community organizations. We apply scientific rigor and cutting-edge technology to provide high-quality and low-cost quantitative and qualitative data collection.

We can turn complex data and metrics into easy-to-create data visualizations and web-based tools that provide users with the ability to easily capture, understand, and present data. This includes geospatial data, statistical and quantitative information, and qualitative data that is diagnosable, mappable, and visually impactful.

## Tools and Services Offerings

Marstel-Day has extensive experience in research, evaluation, analysis, and program management of complex environmental service projects and activities for a diverse group of clients. We have experience with quantitative, qualitative, and mixed-method evaluation for assessing project effectiveness and impact. Our tools and techniques to deliver results across our key sectors include:

- Performance and Impact Evaluations
- Risk Assessments
- Monitoring, Evaluation, and Learning
- Cost-Benefit, Constraints, and Multi-Criteria Analysis
- Climate Change Analysis and Sustainability Planning
- Livelihood Assessments
- Market and Value-chain Analysis
- Supply-chain Dynamics
- Growth Diagnostics
- Social and Behavior Change Communication and Planning
- Stakeholder Engagement, Awareness, Mapping, and Communications
- Full range of GIS services (to include ground-penetrating radar, FREL, MRV)
- Public-private Engagement and Community Partnerships
- Political Economy Assessments
- Scenario Planning and War Gaming
- Facilitation and Training
- Strategic Planning and Program Design
- Strategic Environmental and Social Assessments
- Feedback Grievance and Redress Mechanisms
- Commercial, Legal, and Institutional Reform
- Gender and Social Inclusion Assessments and Analysis



## PROJECT HIGHLIGHTS



**NATO Partnership for Peace/Warsaw Initiative Fund Professional Management Services and Analysis Support.** *Prime, \$4.4M (Mar 2005 - Oct 2015)*



**Countries:** Armenia, Azerbaijan, Belarus, Bosnia & Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Montenegro, Macedonia, Russia, Serbia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, Kosovo, Moldova

**Description:** The Warsaw Initiative Fund (WIF) provides support to developing countries that are members of the NATO Partnership for Peace (PfP) Program to enhance cooperation and stability in Central Asia and Eastern European countries. Marstel-Day provided a range of services, including comprehensive country/regional program-level assessments, strategic planning, thought pieces, program management, and policy and financial analysis. Our assessments analyzed a myriad of environmental (natural resource sustainability and energy/power production), socio-economic (regional, historical, cultural, and gender issues), and political factors (political systems and policy development); and infrastructure gaps and vulnerability (e.g., transportation, energy, water and sanitation facilities and systems, agricultural systems, and educational institutions).

From these assessments, our staff provided quick-turn around reports with option papers and courses-of-action recommendations for senior-level political appointees and decision-makers. Marstel-Day was instrumental in protecting oil production, natural resources, and energy capacity in Azerbaijan and developing a national maritime strategy to prevent and mitigate environmental impacts. In Georgia, we provided programmatic and management assistance to develop a 4-year educational institution to benefit the country's military personnel. Our detailed program and project activities focused on analyses for continually shaping and refining approaches to emergency planning and consequence management, logistics, policy and strategy, human resource management, planning, budgeting and resource management, and stability operations/peacekeeping operations. We also assisted governments in identifying and obtaining international and local experts from academic, think-tanks, federal-funded R&D centers, and nonprofits to execute workshops and seminars that supported in-country WIF programs.



## PROJECT HIGHLIGHTS



**Encroachment Control for the Navy and Marine Corps (Strategic Landscape Management Plan).** *Prime, \$19.5M (Jun 2007 - Present)*



**Countries:** North America, Guam, Northern Marianas, Hawaii, Japan

**Description:** Marstel-Day assists in the creation of strategic landscape management plans, referred to as an Encroachment Control Plan (ECP) for the Marine Corps and Encroachment Action Plan (EAP) for the U.S. Department of the Navy. An ECP/EAP is an innovative landscape planning tool, developed by Marstel-Day, to assess environmental and socio-economic issues and land use conflicts across the landscape that affect operations, trainings, and facilities. These plans include the application of environmental management tools, social and community outreach initiatives, risk analysis, landscape GIS analysis, sustainability analysis, grievance redress, and other methods for resolving current and long-term land-use compatibility challenges involving multiple stakeholders and community groups. The primary outcomes are (1) identification of incompatible land use practices, (2) sustainability of regional natural resources, (3) prioritization of conservation areas and green infrastructure needing protection, and (4) development of a set of strategies to avoid, mitigate, or manage identified environmental and socio-economic impacts.

We have delivered over 20 ECPs/EAPs around the globe. Our international projects address encroachment factors and constraints using a multi-stakeholder approach; liaising with host nations, regional, federal, state, local, and NGO and CSOs, affecting mission operations. Issues analyzed in Guam, the Northern Marianas, and Japan included: uncertainties about construction of new roads; seaport capacity improvements; anticipated economic steady-state; lack of up-to-date land use planning data; dependence upon a single aquifer threatened by both contamination and salt water intrusion due to sea level rise; invasive species; threatened and endangered species; coastal zone management; and traditional fishing. Recommendations for strategic actions to manage these issues included: implementing cost-effective, sustainable LID methods; developing a seaport management plan; funding NRM and green infrastructure projects for species recovery; and identifying cultural-based training restrictions.





# PROJECT HIGHLIGHTS



**Encroachment Management, Energy Development, and Climate Risk Services for Air Force.** *Prime, \$59M (Sept 2008 - Present)*

Encroachment and Sustainment Challenge Area	Mission Impacts	Community Impacts	Program Implementation	External Stakeholders
Airspace and Land Restrictions	●	●	●	●
Airborne Noise	●	●	●	●
Urban Growth	●	●	●	●
Spectrum Encroachment	●	●	●	●
Endangered Species and Critical Habitat	●	●	●	●
Air	●	●	●	●
Water	●	●	●	●
Cultural Resources	●	●	●	●
Unexploded Ordnance and Munitions	●	●	●	●
Marine Resources	N/A	N/A	N/A	N/A
Energy Compatibility and Availability	●	●	●	●
Security/Safety	●	●	●	●
Natural Factors and Climate Effects	●	●	●	●
Key: ● → ● → ● → ● → ● (Insignificant → Very Significant) (Highly Effective → Significantly Ineffective) N/A: Not Applicable				

**Countries:** North America, United Kingdom, Germany, Japan, South Korea

**Description:** Marstel-Day has prepared over 100 Installation Complex Encroachment Management Action Plans (ICEMAPs) and Regional Encroachment Management Action Plans (REMAPs) for the Air Force (AF). We recently completed eight (8) ICEMAPs and one (1) REMAP in the UK, Germany, Japan, and Korea, supporting a regulatory and analytic framework, determined in consultation with the host nation and the AF. These plans assist leadership and decision-makers in the prevention of encroachment challenges, reduces impacts on missions to enhance sustainment, provides training for installation and community personnel on encroachment management frameworks, and engages internal and external stakeholders through the promotion of compatible land-use partnerships.

Encroachment/resiliency challenges encompass multidisciplinary categories, such as compatible use (e.g., cultural resources, land, noise, spectrum); competition for resources (e.g., airspace, land, water supply); environmental, safety, or health regulatory requirements (e.g., air and water quality, threatened and endangered species, NEPA, unexploded ordnance); security; and long-term mission sustainment (e.g., climate change, energy).

The data that our teams collect and analyze are compiled into a comprehensive electronic database that contains all encroachment data for the 100+ plans completed since 2008. Marstel-Day designed and developed an *ICEMAP Tabular Analysis Tool* to provide a comprehensive and interactive data repository for the results of our encroachment analysis. This tool captures, displays, sorts, and reports encroachment data to provide situational awareness and inform resource allocation. We have organized 12+ planning assistance teams for facilities and installations to address encroachment challenges and opportunities. Our teams provide training and education, outreach and engagement, and management support during site visits. Our innovative computer-based training modules focus on management information for military staff and community planning liaisons.



# PROJECT HIGHLIGHTS



**Water Resource Management and Sustainment Plans (WRMSP) for DoD.** *Prime, \$675K (Sept 2014 - Sept 2016)*



**Countries:** Multiple countries in Europe, Asia, South Pacific

**Description:** A recurring result of the ICEMAPs, ECPs, and EAPs that Marstel-Day produced was the identification of water security as a long-term concern for military installations and their host communities. Degradation of water sources, competition for limited water supplies, deteriorated military water infrastructure, and reliance on external water providers created operational risks to military training missions and financial risks to DoD’s multi-billion-dollar investment in military facilities. Marstel-Day proposed and was awarded the opportunity to develop and test a first-of-its-kind triage tool to review installation water issues on a watershed scale and prepare a watershed-based analysis and plan, known as the Water Resource Management and Sustainment Plan (WRMSP). Five installations were selected to prototype the approach, and two sites included significant research into the state water regulations and executive orders mandating conservation, the state’s unique regulations on water rights, and new legislation (Sustainable Groundwater Management Act) for improving water management of the state’s aquifers.

Marstel-Day’s water study teams analyzed watershed and base water usage data, the installations’ water infrastructure, wastewater treatment, groundwater wells, water conservation measures, and water encroachment challenges in the watershed. A separate report highlighted lessons learned from the studies, along with best management water practices promoted by water advocacy organizations, other services, and private industry.

A transformational result of our WRMSP work was the creation of a comprehensive water security framework that can be utilized globally by local and regional governments, water providers, private industry, and other water consumers. This framework describes water security in terms of sources, supplies, systems, standards, sustainability, sponsorship, and stakeholders. This holistic water security approach can reduce these vulnerabilities by encouraging water stakeholders to work together to accept responsibility for each of these water security factors.





# DEEP GREEN COMMITMENT

## We talk the talk and walk the walk

**We believe that the green practices we apply daily** in our internal operations can be replicated by our clients and the community, and we regularly carry that message to our stakeholders and the public.

**Insightful and dynamic collaborations with critical environmental thinkers and planners**, online interviews, webinars, guest blog posts, and the time-tested advice we provide to our clients are just some of the ways we share our environmental knowledge.

**We leverage outreach and engagement** to disseminate the environmental, social and economic benefits of practicing eco-leadership. We facilitate environmental workshops, chair green business councils, present findings to community groups and government commissions, and sponsor awards to recognize local environmental leaders.

- Certified Sustainable Service Provider (highest level under NSF's P-391 standard)
- Earth Day Commitment
- Partner with CarbonFund.org
- Partner with EPA Green Power Program
- Internal Green Vision Council
- Wildlife Conservation Awareness Campaign (#StandwithWildlife)
- Vital Voices of the Environment



— Get to know us —

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