

Risks to Critical Infrastructure in Hawaii

A Small Business Perspective

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Small business count by size and industry

Industry				
	Without employees	1–19 employees	20–499 employees	All small businesses
Professional, Scientific, and Technical Services	15,645	2,606	239	18,490
Real Estate and Rental and Leasing	13,045	1,473	99	14,617
Other Services (except Public Administration)	11,483	2,837	255	14,575
Retail Trade	11,246	2,158	288	13,692
Administrative, Support, and Waste Management	10,925	1,271	239	12,435
Construction	8,765	2,505	299	11,569
Health Care and Social Assistance	8,316	2,539	301	11,156
Transportation and Warehousing	8,379	528	162	9,069
Arts, Entertainment, and Recreation	6,002	378	112	6,492
Accommodation and Food Services	2,458	2,199	718	5,375
Finance and Insurance	3,045	573	89	3,707
Educational Services	3,126	384	113	3,623
Wholesale Trade	2,131	928	182	3,241
Manufacturing	1,821	579	132	2,532
Agriculture, Forestry, Fishing and Hunting	1,864	30	3	1,897
Information	1,120	245	39	1,404
Utilities	180	16	5	201
Management of Companies and Enterprises	*	21	83	104
Industries not classified	*	56	0	56
Mining, Quarrying, and Oil and Gas Extraction	18	*	*	23
Total	109,569	21,294	3,130	133,993

* Not reported by the Census Bureau

Sources: [Nonemployer Statistics](#), 2020 (Census); [Statistics of US Businesses](#), 2020 (Census)

Cyberattack caused Oahu bus problems

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Hawaii's healthcare and transportation sectors are critically vulnerable to cybersecurity threats, underscoring the urgent need for robust measures to defend against targeted attacks and prevent collateral damage.

Recent Cyber Attacks in Hawaii:

- 2021 and 2024: Oahu's bus system was shut down
- 2021: Queen's Health System (Oahu) - disrupted systems and delayed patient care
- 2024: Malama I Ke Ola (Maui) - disrupted systems and delayed patient care

Risks and Vulnerabilities - Transportation

- Cyber-attacks on cargo vessels could disrupt essential supply chains, severely impacting the state
- Almost all critical infrastructure in Hawaii relies on transportation
- Attacks range from VANET/ITS in ground transportation to aviation and maritime sectors
- Recent Oahu attacks disabled ground transportation reservations and payment systems
- Only 1 ferry operates from Maui to Lanai and Molokai; a cyber attack would cause severe delays and disrupt access to essential transportation

Risks and Vulnerabilities - Healthcare

- Natural Disasters- Hawaii prone to hurricane, tsunamis, volcano eruptions
- Geographic Isolation- limit specialized medical care and emergency response
- Legacy Equipment- technological failure, lack of updates and patches on s/w
- Overworked staff- decreased alertness, gaps in security, poor password practice
- Workforce shortage- Maui in 2023, as high as 43%, lower security quality
- Telehealth- data privacy, integrity risks during live sessions and storage

Findings

1. Small businesses are more interested in running their day-to-day business than preparing for worst-case scenarios such as cybersecurity breaches.

2. Critical infrastructure in Hawaii is vulnerable due to shortage of skilled technicians and resources across the remote islands.

Conclusion

Cultivating a robust cybersecurity culture is crucial for risk mitigation. This approach emphasizes awareness of social engineering tactics and strong cyber hygiene practices.

The proposed free community cyber clinic and hotline, operated by volunteers who are human experts and augmented by AI, offers proactive advice and crisis management.



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