

Security at the Santa Cruz Beach Boardwalk

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The purpose of this paper is to examine security vulnerabilities at the Santa Cruz Beach Boardwalk in Santa Cruz, California and to provide recommendations for the Boardwalk's security and protection. Located at the mouth of the San Lorenzo River, the boardwalk is admission-free and experiences large amounts of foot and vehicle traffic. Operating since 1907, the Boardwalk boasts that it is "the oldest amusement park in California and one of the last seaside amusement parks on the west coast of the United States... (the Boardwalk's) Giant Dipper roller coaster and Looff Carousel are both National Historic Landmarks and the entire Boardwalk property is a California Historic Landmark" (Santa Cruz Beach Boardwalk, 2025).

Over the years, the Boardwalk has developed into a mixed-use, multi-venue entertainment and leisure complex. It is the site of "...various amusement rides for a total of about 1,140 seats, as well as approximately 170,000 square feet of shops, restaurants, concessions, conference facilities, and administrative offices" (California Coastal Commission, 2004, p.3). The Boardwalk hosts "...about 40 rides, 30 restaurants, 15 retail shops, arcades, miniature golf, bowling, and conference and banquet facilities" (Security Magazine, 2020), and hosts "...trade shows, conferences, dances, parties, conventions, banquets, and wedding receptions" (Santa Cruz Beach Boardwalk, 2024).

For the foreseeable future, the Boardwalk is must remain admission free and open to the public. Adjacent to the Boardwalk is Main Beach, which is a City of Santa Cruz public access beach. There are numerous public stairwells from the Boardwalk to the beach. These access points are required to remain accessible to the public by Division 20 of California's Public Resource Code, known as the *California Coastal Act* (California Coastal Commission, 2004, p.5).

Santa Cruz Beach Boardwalk's Public Safety Concerns

The Boardwalk's open access to the public and wide range of activities and attractions present a variety of security concerns. There are various types of security concerns that are inherent to amusement parks, such as crowd control and prevention of violence and fights. Perhaps less obvious, but still very important to the amusement park security calculus is the presence of "...small children who could get lost, adults who could be there to pickpocket or vandalize, and even outside criminals looking to target specific people or groups" (Silbar Security, 2025). The Boardwalk sells alcohol in the form of beer and wine and permits those beverages in open containers, which can sometimes fuel incidents of crime, disorder, or violence (Bushman & Cooper, 1997; Room & Rossow, 2001). The Boardwalk must take all of this into account when planning its security program. However, other overall public safety concerns, such as crime in the surrounding neighborhood and the threat of terrorism also must necessarily play roles in security planning.

Crime

Crime levels tend to increase in areas surrounding amusement parks (Han et al., 2021), and the area immediately surrounding the Boardwalk is consistent with this finding. Crime mapping has shown local crime rates in the neighboring Beach Flats area to be at 88%, 97%, 78%, 97%, and 93% above the national average for assault, robbery, burglary, larceny/theft, and vehicle theft respectively (Door Profit, 2024); these elevated rates are at roughly twice the national averages. Crimegrade.org gives the neighborhood surrounding the Boardwalk a grade of "D" in terms of crime levels (Crimegrade.org, n.d.). Neighborhood Scout listed the neighborhood surrounding the Boardwalk, including Beach Flats, among its "most dangerous" neighborhoods in Santa Cruz (Neighborhood Scout, 2026). The longstanding backdrop of

crimes in the area is punctuated by violent incidents including stabbings in 2013 (Santa Cruz Police Department, 2013), 2018 (KSBW Action News 8, 2018), 2020 (Santa Cruz Police Department, 2020b), and 2021 (Santa Cruz Police Department, 2021) and shootings in 2020 (Santa Cruz Police Department, 2020a), 2022 (Santa Cruz Police Department, 2022), and 2025 (Santa Cruz Police Department, 2025). The Boardwalk must account for the possibility that these local crimes will impact Boardwalk operations, directly or indirectly.

Terrorism

The Boardwalk clearly falls under the category of what some terrorism researchers have labeled as *soft targets* and *crowded places*, or *ST-CPs* (Hollywood et al., 2024), which are particularly vulnerable to terrorism. A recent U.S. House of Representatives Homeland Security Committee report confirmed the threat to ST-CPs (House Committee on Homeland Security, 2025). As early as 2006, the United States Department of Homeland Security (DHS) released a bulletin detailing the terrorism risk to amusement parks (Department of Homeland Security, 2006). The DHS bulletin listed specific terrorist tactics, techniques, and procedures (TTPs); improvised explosive devices (IEDs), arson, chemical/biological/radiological agents, small arms attack, sabotage, aircraft attack, maritime attack (waterfront park), and cyber attack were all listed as potential avenues of terrorist attack (Department of Homeland Security, 2006). A research report from the United Kingdom also presents compelling evidence that amusement parks are at risk of “...a high-sophistication (such as an) Improvised Explosive Devices (IED), Person Borne Improvised Explosive Devices (PBIED), or Firearms attack”, and noted previous terrorist plots at theme parks in France, the Netherlands, and Bangladesh (Pool Re Solutions, 2024, p.2). All of this considered, concerns of terrorism must also necessarily figure largely into the Boardwalk’s overall public safety picture.

A Security Program to Address the Boardwalk's Security Concerns

Considering all the above, The Boardwalk must develop and implement a comprehensive security program to mitigate risks from internal and external routine crimes and violent crimes, as well as risks from terrorism. A good means by which to develop this comprehensive approach is to employ the paradigm of “Detect, Deter, Delay, Deny, and Defeat”, or “5D” model. This model can be applied to all three risks identified above: internal crime and disorder, external crime and disorder, and terrorism. Attention should be given to the Boardwalk's security personnel, Boardwalk security policies, and security-related physical attributes. The following sections will address Boardwalk security personnel, policies, and physical attributes, and then use the security threats from the DHS bulletin mentioned above and apply the 5D model.

Personnel

Personnel are arguably the most important part of any security program. The proper recruitment, selection, and training play a vital role in the placement of quality personnel into any security program. The technology and procedures that inform the overall security program are rendered ineffective in the hands of personnel who are improperly recruited and selected or poorly trained.

The Boardwalk employs security personnel under the auspices of the Santa Cruz Seaside Company Security (“Seaside Company”), licensed as Private Patrol Operator (PPO) 17427 (Bureau of Security and Investigative Services, n.d.) under California's Private Security Services Act (California Business and Professions Code, n.d.). By having created a PPO, the Boardwalk has availed itself of the capacity to have armed security personnel in addition to unarmed security personnel; the Boardwalk utilizes both armed and unarmed security through the Seaside Company. Had the Boardwalk's security operation been kept as a Proprietary Private Security

Employer (PPSE) under the Proprietary Security Service Act (California Business and Professions Code, n.d.b), the use of armed security would have been prohibited, as the PPSE does not provide for the carrying of any weapons by licensees employed under its provisions. The utilization of armed security personnel provides a more capable response to incidents of violence at the Boardwalk and enables on-site security personnel to address deadly force threats, such as active shooters.

Candidates for employment as part of the Seaside Company's security team at the Boardwalk should also be screened for indications of poor behavior or bad decision making. Because California screens armed security personnel more stringently than unarmed security personnel, the Boardwalk has also intrinsically enhanced its selection criteria, at least when it comes to its armed personnel. Any move to increase the ratio of armed security personnel will thus proportionally increase the number of more highly screened candidates and could provide modest improvements in the Boardwalk's security posture.

The recruitment of personnel with law enforcement and/or military experience should also be kept at the forefront of the Seaside Company's recruiting for its Boardwalk security team. Current and former police and military personnel bring experience in areas that those two professions have in common with private security. Following a chain of command, complying with directives and orders, effective communication, arrest and control of suspects, report writing, and firearms use are several such areas. Recruiting personnel who are already familiar with these aspects of the job, even if the Boardwalk's version of each aspect is unique to the Boardwalk, can be helpful to the Boardwalk's security operation.

For both its armed and unarmed security personnel, the Boardwalk should ensure that its security force is well-trained both initially and ongoing. The Seaside Company has a relatively

extensive initial training program for its personnel. Boardwalk security personnel undergo 100 hours of training, covering topics such as arrest, crowd control, terrorism awareness, public relations and communication, guest services, first aid, AED, CPR, report writing, chemical agents, police baton, ethics, loss prevention, and gangs (Santa Cruz Beach Boardwalk: Security Officers at the Beach, 2026). This 100-hour training program far exceeds the training program required by California law. The Seaside Company should continue to train its security employees for the entirety of their employment at the Boardwalk, ensuring that they are kept current on perishable skills and specialty skills. Additional training, pay incentives, and other employment-related incentives should be given for trainable skills, such as foreign language fluency, EMT certification, crisis intervention team (CIT) certification, and security industry certification such as the ASIS (formerly “American Society for Industrial Security” until a 2002 name change) Certified Protection Professional, or Private Officer International’s certification programs such as Certified Protection Officer, Certified Asset Protection Professional, and Command Staff College. While these programs are examples, there exist a vast number of training programs that would benefit the Boardwalk’s security personnel and the program.

Policy

Having the right security policies in place is a vital component of any security plan. Security policies that address the Boardwalk security team’s ongoing operations can be used to clarify issues and shape a security department that presents well to the public. An example of this is uniform policy. When security personnel wear their uniform properly and exhibit a professional appearance, the program is changed in that it represents the customer (the Boardwalk, in this case) well to the public and inspires more respect and confidence in security

personnel and operations. The Boardwalk should continue to ensure that its personnel are held to the high standards of professional uniform appearance that they have displayed to date.

Policy on the use of two-way radios, for example, is also quite important in the Boardwalk's security plan. Excessive or unprofessional use of the radio can portray to the public an unprofessional approach, undermining the confidence that would have otherwise been present. Additionally, radio traffic can reveal to bystanders critical information and provoke panicked or violent reactions that can be hard to contain once crowd mentality takes over. Requiring the use of an earpiece with one's radio, for example, can limit what information is inadvertently disseminated to the public and can assist in everyday radio operations.

Policies that dictate what security actions must be performed and the location and timing of those activities can dramatically impact security. For example, Ariel et al. (2017) demonstrated how policies that require visible patrols by security personnel impact crime. The study documented a "...16% reduction in victim-generated (reports of) crime" (Ariel et al., 2017, p.1). The Boardwalk should ensure that policies foster an environment of visible, proactive security work that helps to keep the public safe. Policies that require security personnel to post at key locations, that require security personnel to perform periodic checks at areas of special concern, and that require prompt reporting are all examples of how policies can shape the Boardwalk's security program positively. Along with this, a policy that ensures sufficient security staffing appropriate for conditions (day, time of year, date, etc.) should inform daily scheduling to allow for adequate security assets to be on hand to address security concerns.

Security policy designed to protect the Boardwalk goes beyond the requirements it places on security employees. Policies that deal with opening and closing procedures for the various Boardwalk stores and attractions and policies that deal with how cash is transported from one

place to another also have direct bearing on the overall security posture. Also, in an age of near-ubiquitous terrorism threats, security policies that restrict access to critical areas, such as powerplants, environmental systems, food preparation areas, and ride infrastructure areas cannot be overlooked; a terrorist breach into any one of these areas could have catastrophic consequences. Policies that require all Boardwalk employees to wear identifiable clothing and/or badges and policies that inform key control fit into this area as well.

The Boardwalk's approach to maintaining mental health of security personnel should also be addressed by policy. Security personnel are regularly exposed to personal violence and threatening behavior and are often the true "first responders" to critical incidents, whether or not that is codified into law. As Talas et al. (2021) documented in their study involving private security in the United Kingdom, employers were not always keen on providing mental health care to their employees and were sometimes unwilling to acknowledge the job's impact on the mental wellness of security personnel. In all cases, but especially where armed personnel are employed, such as at the Boardwalk, employers should be more cognizant of these impacts. The Boardwalk can work toward addressing this by implementing actions such as, for example, after-action briefings (AABs) for critical incidents.

Infrastructure and Physical Layout

The Boardwalk's infrastructure and physical layout present challenges to creating an effective security program. As mentioned before, the Boardwalk is, and must remain, public access. The use of gates or turnstiles is highly impractical. Beachgoers who are traversing the Boardwalk carry various types of beach gear, such as coolers, sunshades, beach chairs, and barbecue grills all of which could pose access problems and much of which would create false positives for security measures such as magnetometers.

But there are still physical measures that can increase security. The installation and maintenance of sufficient lighting, especially in hours of darkness, is one such measure. Ensuring that gates and doors are locked and unobstructed is also important. Placement of food and gift kiosks in a way that does not obscure surveillance can also assist with preventing robberies and thefts.

Use of the concepts put forth under the discipline of crime prevention through environmental design (CPTED) can also help considerably. Maintenance of shrubs and bushes by landscaping personnel can help to ensure that visual avenues remain open, facilitating monitoring by Boardwalk security personnel. Essentially, to make use of CPTED principles, the Boardwalk should ensure that any infrastructure is steered toward adherence to natural access control, natural surveillance, territorial reinforcement, maintenance, and activity support (City of Apache Junction, AZ, n.d.). While some of those attributes make obvious sense to the outside observer, others, such as *maintenance* might not be as readily discernable as security measures. Put another way, the hidden benefit of *maintenance* of one's property is that it demonstrates a sense of care and dominion over one's property, discouraging illegal acts (City of Apache Junction, AZ, n.d.). CPTED may be challenging to address in open, public spaces, but the benefits of making one's property a target "less suitable" for crime is well worth it, if "crime is less likely to take place in the here and now" (Gooren, 2023, p.417).

The 5D Model: Deter, Detect, Delay, Deny, and Defeat

The 5D model seeks to provide a comprehensive approach to security. Its principles can be applied to virtually any security program or environment in prescriptive, analytic, or forensic sense. The forensic application of this model deals more with determining what was or was not effective in a given circumstance, usually after a security incident has occurred; this paper is not

intended to address or analyze any specific historic incident. While this paper does brush up against the analytic sense of the 5D model's application to the Boardwalk's security program, the intent of this paper is best met by using 5D as a prescriptive measure. Addressing routine crimes, violent crimes, and the threat of terrorism such as the ones identified above by DHS, the following section will prescribe various protective measures and identify their 5D applicability.

Deterrence

As discussed above, the Boardwalk is likely to experience routine crimes such as shoplifting, vandalism, and public order offenses. To deter routine crime, the Boardwalk can deploy various signage and security personnel as visible deterrents. Closed circuit television (CCTV) security cameras also provide a limited deterrent effect. One example of the deterrent effect of CCTV on a low-level crime comes from a study that showed how CCTV cameras lowered shoplifting rates (Özaşçılar, 2025). Because the Boardwalk does have stores, there may be a viable use for CCTV to help deter shoplifting in the retail sections of the Boardwalk.

Deterring a violent crime might involve some of the same deterrence measures discussed above. Although signage may not have much of a deterrent effect on someone determined to commit a violent act, when that signage is combined with CCTV (and announces the use of that CCTV), there can be some deterrent effect. The CCTV, alone can also provide a limited deterrent effect. A much more effective deterrent, though, is the presence of professional, trained security personnel who can exude command presence and present the impression that violent acts will be addressed swiftly. Timely involvement of local police can also have this effect.

Deterring a terrorist act is a bit more complicated. To begin with, the likelihood of deterrence must be analyzed differently for a terrorist than for a garden variety criminal. A criminal, generally, neither wants to nor expects to die, in most cases. A terrorist, on the other

hand, may be so ideologically motivated that death is not of any concern; many terrorists are *suicide bombers* who intend to die as part of their attack. If there is any deterrence to be had in that type of circumstance, it would likely have to come a long time before any attack is even planned and would come at a level that is not easily influenced by the Seaside Company or the Boardwalk. Such deterrence is more aptly dealt with in realms of ideology or intelligence operations.

Any hope of deterrence as relates directly to the Boardwalk might come in the form of target hardening, and this would have to be done on a micro-basis. The Boardwalk's open public access status and multiple public access layout leaves only the type of target hardening that applies to deterrence of crimes, and that has only limited value when applied to deterring terrorism.

A particular aspect of deterrence as relates to the 5D model is that it is prone to *overlapping* with other elements. For instance, when someone sees an arrest being made of one of their fellow criminals or terrorists ("Defeat"), that also has a deterrent effect on those who would commit crimes or terrorism. When word gets out that acts of crime are being detected early into their commission, or perhaps even before, that also serves as a deterrent.

Detection

To detect routine criminal activity, the Boardwalk should be able to rely on the observations of its security team and security operations center (SOC) CCTV operators, as each of these entities can receive training on what to look for in detecting crimes. CCTV systems can also utilize emerging technology that analyzes behavior clusters to determine likely illicit or unwanted activity (Aggarwal & Reddy, 2014; Boualia, & Chikhaoui, 2022; Saluja et al., 2023).

To a lesser degree, Boardwalk security can rely upon Boardwalk employees, merchants, and guests to detect and report routine criminal behavior.

The same measures used to detect routine crimes can be used to detect violent crimes. Observations on the part of security personnel, either present on scene or viewing the developments via CCTV camera can serve to detect violent behavior, particularly once it has begun. Detection of pre-incident behavior might be accomplished by the same enhanced CCTV algorithmic analysis mentioned previously, as reported by Aggarwal & Reddy (2014), Boualia, & Chikhaoui (2022) and Saluja et al. (2023). Training in pre-assault indicators for security personnel might be accomplished by any of numerous experienced trainers, many of them police or former police; one such training course is offered by Detective Sean Grogan and comes in the form of a one-day seminar (Street Cop Training, n.d.).

The Boardwalk does have some potential to detect terrorism. It seems almost too obvious to mention that a terrorist attack, once underway, will be easy to detect without any specialized training or equipment. The important role detection plays is *pre-incident*. While some of this pre-incident detection is better addressed by agencies that monitor social media and intercept clandestine communications between terrorists, there are some things that the Boardwalk can do. Use of technological solutions, such as algorithmic analytic CCTV systems and training for security personnel in terrorism awareness are good places to start.

An additional solution for the Boardwalk to consider is the use of canines for explosive detection. This practice has been longstanding and highly successful across various domains, public and private. There are companies that specialize in such services, such as 3DK9, which boasts of including amusement parks as part of its clientele (3DK9, 2026). However, in the same

vein that the Seaside Company created its own PPO, it could also form a canine division of that PPO if business or quality control concerns so dictate.

Delay

To delay routine crimes is not possible in every case. However, proper CPTED that forces a would-be criminal to delay his crime until he finds an area that is suitable would fall under this category. An example of this might be the vandal that must find an area that is either poorly lit or left secluded, because proper implementation of CPTED principles has made most areas of the Boardwalk easily observable.

Delaying a violent crime from occurring is difficult, particularly if the violent crime has been pre-planned and possible delays have been accounted for in the planning. However, there is likely some value to having Boardwalk security personnel be aware of pre-indicators of violent acts, such as confrontations that look to be evolving into physical violence and separating involved parties. That sort of instant delay can allow time for tempers to cool and viable solutions, such as removing violators from the Boardwalk, to be considered and implemented.

Delaying terrorism can refer to pre-attack delay or, in the case of an active, ongoing terrorist attack, delaying an attacker or attackers while engaged in the attack. Pre-attack delays might be accomplished by attackers perceiving a robust, active security program with armed personnel, CCTV cameras, good physical security architecture and design, and policies and procedures that work to thwart terrorism. However, this delay might never be known to the Boardwalk, as the terrorists might not be discovered until their attack is underway.

Delaying terrorists during an attack contemplates security measures such as locked doors and restricted access areas. However, as these access restrictions would also apply to the public,

which is a likely target of terrorists seeking to inflict maximum fear, the same delay techniques might facilitate, rather than delay an ongoing attack. An active shooter is a good example of this type of situation. Delay, in this instance, is a difficult goal to actively, knowingly achieve. One ray of hope in the endeavor of delaying a terrorist attack might be the armed security engaging the terrorists and stopping their forward progress toward any other human targets. This would rely on having a security force that is both well trained and well equipped to accomplish this. While not impossible, this is a difficult goal, but it is worthwhile to pursue bettering one's employees as much as possible. The Boardwalk could use any of numerous trainers to train its security force to prepare for this.

Denial

To deny a criminal the opportunity to commit a crime can also involve CPTED, as locks and gates are integral elements of a valid CPTED program. Placing high value Boardwalk merchandise behind a store counter in shelves that are inaccessible to shoplifters and thieves presents another example of denying a criminal the opportunity to commit a crime. Using physical barriers in areas of restricted access, such as sallyports into administrative and employee areas also addresses the denial of opportunity to commit a crime.

Denying someone the opportunity to commit a violent crime can depend largely on what the crime is, and it may not always be possible. However, an example of a physical barrier that would deny someone the opportunity, for instance, to attack a guest services person with whom they are dissatisfied, can be seen in the plexiglass windows that the Boardwalk uses to separate guests from those who sell ride tickets at guest services. These plexiglass windows, which prevent physical contact between guests and employees, deny the opportunity for a violent attack to occur.

Much like delay of a terrorist attack, denial, in the case of the Boardwalk, could be difficult to achieve. It might be possible to have micro successes in denying access to areas that an explosive device could be hidden to cause massive structural damage to a Boardwalk ride or event space. But the open access of the Boardwalk again makes area denial difficult.

One interesting implementation of denial might come in the form of the Boardwalk using CCTV combined with facial recognition, similar to how the Mall of America does (Jackson, 2024). By entering the faces of persons that the mall has trespassed into the facial recognition portion of the CCTV system, the mall has enabled the CCTV system to provide alerts to security personnel as soon as the trespassed person is filmed. This type of facial recognition could be made to apply to trespassers at the Boardwalk, but it might also be utilized with the faces of known terrorists, and Boardwalk security could perhaps intercept an arriving terrorism suspect before he had an opportunity to implement a terrorist attack.

Defeat

To defeat a routine criminal that is in the process of committing a crime will usually involve some level of intervention. Boardwalk security personnel who are trained and authorized to do so might make a physical arrest of a routine criminal. Should the circumstances require it, those same security personnel could escort an unruly person from the premises. Should the situation dictate, on-scene security personnel could summon other security personnel or law enforcement to assist in intervening in this routine crime.

Defeating a violent crime once it has begun will also involve intervention, likely physical. Boardwalk security personnel could use physical force to intercede in the violent act. That force might come in the form of de-escalation techniques, unarmed defensive tactics (DT), arrest control techniques (ACT), chemical agents such as oleoresin-capsicum (OC), use of an

impact weapon like a police baton, or, as a last resort, the use of deadly force. The force used in the intervention must be appropriate and proportional to the force being exhibited by the criminal. Proper training, as discussed above, must thus include use of physical force techniques, legal and ethical considerations, and training on documenting use of force incidents.

Defeating a terrorist attack, once underway, generally involves bringing force to bear on the terrorists. There is a possibility, here, for a low to moderate level of success. The Boardwalk deploys dozens of security personnel during the days on which it is operating, numbers that would likely rival, match, or exceed the number of terrorists that might attempt an attack. However, the success here, if it is to be had, will rely on extensive training and high-grade equipment for the security force. The Boardwalk can again use any of a number of trainers to prepare its security force to respond to this.

Another aspect of defeating a terrorist attack is the saving of lives of people that terrorists intended to kill. The Boardwalk has another chance to mitigate this and *defeat* this aspect of a terrorist attack. By either training or incentivizing Boardwalk personnel – not just security, but other job classifications as well – to get training in standard first aid, CPR, AED, trauma-based first aid, or EMT certification, the Boardwalk can help to defeat the terrorists by helping to save the lives of any terrorism victims that the Boardwalk incurs.

Conclusion

The Santa Cruz Beach Boardwalk faces a variety of threats, including low-level crime, violent crime, and the threat of terrorism. The surrounding neighborhood amplifies that situation. Longstanding and recent crime information avers the crime problem. Our nation's Department of Homeland Security affirms threats to the type of facility that characterizes the Boardwalk, an amusement park. The Boardwalk must account for all of this and ensure that it

has a robust, proactive security operation. The Boardwalk must continue addressing the considerations of personnel, policy, and physical infrastructure. The Boardwalk must also consider an ongoing security program, such as one based on the *5D* (deter, detect, delay, deny, defeat) model and strive to ensure a safe experience for all its guests.

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