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BUILDING HEALTHY CITIES

Wastewater Overflow to My Khe Beach

Da Nang Journey Map Series 2020-2021

About This Series

Building Healthy Cities (BHC) is a USAID-funded learning project in four Smart Cites in Asia – Indore, India; Makassar, Indonesia; Da Nang, Vietnam; and Kathmandu, Nepal. BHC is testing how to successfully apply urban planning approaches that improve the social determinants of health in complex systems.

BHC uses exploratory data collection, multisectoral engagement, and citizen participation. This systems approach informs project activities and the prioritization of city-funded workplans. The combined impact should improve the lives of all residents in these three cities and reduce preventable mortality.

BHC is using several tools and processes to create coalitions and organize its approach in each city. One key process is systems mapping to illustrate the key dynamics (patterns underlying problems) and define key entry (or 'leverage') points to address social and environmental determinants of health. Another way that BHC is documenting citizen experiences in each city is through Journey Maps.

The Journey Maps apply 'design thinking' approaches, which are often used to tailor products to intended customers; citizens are like customers in that they pay taxes or fees to use city services. BHC has adapted this tool to document the experience (or 'journey') of citizens who are trying to overcome one service issue in each city, over time, updated on a quarterly basis. The specific topics were identified during the first year of activities in each city and fit within the larger context shown in the systems maps. BHC is using these Journey Maps to track citizen and city official perspectives, and to document change at the neighborhood level.

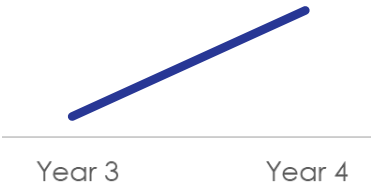
BHC is training people in each neighborhood to develop and use these Journey Maps and on grassroots advocacy techniques. By bringing the citizen experience directly to city planners, BHC hopes to better align municipal planning with community priorities such as safe water, clean air, hygiene, traffic safety, and other key components of healthy urban living.

Life of Project Journey Map Summary

BHC is concluding the Journey Maps in 2021. This process brought insights into day-to-day service availability for Da Nang residents, and created a regular dialogue with the community and city offices about the causes, consequences, and potential solutions to persistent urban health-related issues.

In this 2-year map focused on barriers to cleaning up a local beach, COVID-19 delayed completion of the wastewater treatment plant by over a year. However, beach closures and stay at home orders for COVID-19 prevention also had a positive effect by reducing the amount of trash on the beach. The city has also seen record rainfall in recent years. The wastewater treatment plant and accompanying drainage system will hopefully position the beach to adapt to these and other climate change-related issues in future years.

Journey Map Trajectory



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Da Nang Journey Map #2 – Wastewater Overflow to My Khe Beach

YEAR 3 Da Nang City's well-known beaches attract millions of tourists every year. However, the environment at beaches in recent years has been negatively affected by the overflow of wastewater. This issue has caused dissatisfaction among citizens and tourists, and many related complaints have been raised, especially in the beginning of the rainy season. The city has been implementing several solutions to deal with this issue such as: constructing sewage systems to collect wastewater and rainwater separately; temporarily building sand dams at beach floodgates; and providing guidance on environmental protection for coastal service providers. This journey map will record and investigate the wastewater issue at My Khe beach. It was voted as one of the most charming beaches on the planet by Forbes Magazine (2005) and is a famous tourism destination in Da Nang. Located 6.4 km from the airport, this beach is near many luxury hotels and restaurants.


Sewerage at My Khe beach (left, source: BHC, Sept. 2020). An excavator at work near the sewerage (right, source: BHC, Sept. 2020).

DATA POINT:
"Da Nang's rapidly growing tourism industry is estimated to serve 3.5 million international and 5.2 million Vietnamese tourists in 2019, bringing in 30.9 trillion VND in revenue."
— Da Nang Department of Tourism

"As a Vietnamese citizen, I love Da Nang City very much...I have some suggestions to the city from my daily observations...some stinking wastewater running straightly into the sea."
— Tourist via Citizen Feedback Portal, Dec. 2019

"I go to the beach for exercise almost every day...The overflow of wastewater to the sea usually happens after the rain. Especially in the early rainy season, in the first 1-2 days after the rain wastewater often makes the seawater black and having sewage smell."
— Resident of My An Commune, March 2020

"The reason is the combining collection pipe system of wastewater and storm water in this area...Although wastewater discharging into the sea mainly occurs in the rainy season and does not affect much seawater quality, but it affects the landscape and psychology of citizens and tourists."
— Division of Tourism Resource Development Planning, Department of Tourism, April 2020

"The city is conducting some construction packages within the Da Nang Sustainable Development Project to build tertiary sewer pipe network and connect households in My Khe, and My An areas. These works are expected to complete by 10/2020. After these works complete, all wastewater will be collected and transferred to Son Tra wastewater treatment plant."
— Da Nang Priority Infrastructure Investment Project, April 2020

ACTION:
Construction is in progress on wastewater collection projects. The city expects to complete construction by October 2020.

"As a rescuer here for more than 20 years, I have seen the overflow of wastewater in recent years…Every year when the rainy season comes, the wastewater overflows into the sea, no one dares to swim, the smell is very stinky."
— Rescuer at My Khe beach, June 2020

"This is one of the most concerning issues of the city. In 2019, the City had a campaign to assess the discharge into the sea (111 restaurants and hotels with a scale of over 200 rooms or more along the beach)…This year we will focus on the training of wastewater discharge for these facilities. DONRE [Department of Natural Resources and Environment] is implementing a project on applying IT to manage and control wastewater discharge in restaurants, hotels along the beach."
— Environment Protection Authority, July 2020

"I haven't seen wastewater overflowing into the sea since the beginning of this year (due to the absence of heavy rain)…but I feel itchy after swimming which is not due to jellyfish. The reason may be wastewater? The overflow of wastewater into the seas affects life because wastewater with domestic waste causing pollution…not daring to swim."
— Resident of My An Commune, June 2020

"The sea needs 5-10 days to be clean again after the overflow of wastewater…tourists complain a lot, including foreigners."
— Vendor, June 2020

NO ACTION:
Progress was on hold due to closings during the second wave of COVID-19 in Da Nang.

"Recently I have not seen any wastewater coming from the sewerage but it still smells very bad. People swim normally because the sea water is quite clear. I think these days there has not been much wastewater flowing out because this is tourist area, due to the COVID-19 pandemic, all restaurants and hotels were forced to close, therefore no wastewater discharged from those places."
— Resident of My An Ward, Sept. 2020

"After the storm, I saw the wastewater discharge from the sewer, however not as much and not as stinky as before. It seems to have been treated by disinfection. I have seen an excavator there for several days to shovel sand from the sea into the sewer and bury the manhole. I guess by doing that, the wastewater from the sewer will not flow into the sea."
— Vendor at My Khe beach, Sept. 2020

CITY FUNDING ALLOCATIONS
Da Nang City is funding a US$ 60.8 million wastewater treatment project at My Khe Beach through September 2021.

"Since the second wave of COVID-19 no on-site inspections have been carried out. There are no serious reported incidents though because all the hotels halted their services. But the last heavy rain affected by the Noul hurricane could cause a very high volume of water flew into the ocean. That is why you could see an excavator fix the sand bank in front of the discharge door again."
— Environmental Protection Agency Officer, DONRE, Sept. 2020

Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4

KEY: Action | Negative Action | No Action | Special Note | Citizen/ Resident | Media | Government Official | Service Provider | Data Point

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BUILDING HEALTHY CITIES

Da Nang Journey Map #2 – Wastewater Overflow to My Khe Beach

YEAR 4 Da Nang City's well-known beaches attract millions of tourists every year. However, the environment at beaches in recent years has been negatively affected by the overflow of wastewater. This issue has caused dissatisfaction among citizens and tourists, and many related complaints have been raised, especially in the beginning of the rainy season. The city has been implementing several solutions to deal with this issue such as: constructing sewage systems to collect wastewater and rainwater separately; temporarily building sand dams at beach floodgates; and providing guidance on environmental protection for coastal service providers. This journey map will record and investigate the wastewater issue at My Khe beach. It was voted as one of the most charming beaches on the planet by Forbes Magazine (2005) and is a famous tourism destination in Da Nang. Located 6.4 km from the airport, this beach is near many luxury hotels and restaurants.

My Khe beach was closed to swimmers in June 2021 (left). Sewage drainage construction in Vo Nguyen Giap Street, arranged to allow traffic to pass by in September 2021 (right).

Quarter 1

ACTION: Construction began on the US$ 60.8 million wastewater treatment project.

"The toilet is quite clean but there is only one toilet can be used for a long distance. I have heard a lot about wastewater flowing into this sea and I think it affects not only to the marine environment but also to the human's health. I suggest that the governmental agencies should strictly control with the eating and drinking on the beach."
— Jogger, Dec. 2020

"I found a lot wastewater coming from the sewerage and it sometimes smells. The beach is full of plastic waste, broken bottles…It affects the quality of life, especially for the swimmers. In my opinion, the wastewater needs to be treated before flowing out to the sea, the beaches need to be cleaned regularly and the citizens could have more chances to be trained on the awareness of protecting the environment." — Jogger, Dec. 2020

"The plastic waste pollution has seen clearly in this beach. After the raining, the most trash is the plastic waste. It is necessary to raise the awareness of citizens in protecting the environment. The untreated water from the restaurants needs to be checked regularly." — Swimmer, Dec. 2020

"Currently, the untreated water from the hotels and restaurants in this area is flowing out to the sea which causes unsanitary conditions. The comments from the citizens are right. The entrance to the beach has been invested more and basically meets the needs of citizens. However, it is necessary to provide more facilities along the beach entrances such as sport equipment, parking area…to serve the citizens and tourists. During the last storm season, the management board had a good plan to clean the environment as well as mobilized the youth union and schools to…clean up the beach and thousands of garbage has been removed. In 2021, the management board will pay more attention on cleaning this area, especially before the big events such as Wonderful Da Nang, International Firework Competition."
— Department of Tourism Official, Dec. 2020

Quarter 2

ACTION: Construction continued on the wastewater treatment project.

"There are a few drains to the sea here. Compared to the previous years, the wastewater flowing to the sea through these drains is less and it sometimes smells in the sunny days. My Khe beach is considered as a most beautiful beach in Da Nang. Almost all swimmers and tourists here are awareness of protecting the environment so that the amount of waste in this beach is not much compared to other beaches. To improve the landscape of the beach, I hope that there will be more waste bins are installed and the governmental agencies will take more actions to prevent the wastewater flowing to the sea." — Fisher, March 2021

"I am quite concerned about water pollution for swimmers here. There is a wastewater flowing to the sea and it smells bad in the dry season." — Seller near the beach, March 2021

"Almost the citizen here are awareness of garbage collection and environmental protection. However, it quite smells at the end of Vo Nguyen Giap street since the seafood shells. I hope that the related governmental agencies will take actions to deal with this problem."
— Citizen, March 2021

"Currently, the wastewater flowing into the sea is one of great concerns from the city levels and related management agencies. Regarding this problem, the hotels and restaurants are permitted to discharge water into the sea if the water source is treated and following the Vietnam's technical regulations on domestic wastewater, seawater for bathing purpose. Da Nang Department of Natural Resource and Environment is implementing an IT project to manage and control the wastewater flowing to the sea from the hotels and restaurants near the beach for the old system. In addition, the city invested a lot of money for many projects of wastewater treatment along the sea road. It is applied a modern technique to construct the system and it will change the face of the city in near future."
— Environmental Protection Agency Officer, DONRE , March 2021

Quarter 3

NO ACTION: COVID-19 delayed movement of materials and progress on the wastewater treatment construction project.

"Due to the pandemic, the movement of materials was delayed so the project was not completed on time. The project is in the stage of connecting the wastewater pipes from the households to the collection sewer and is carrying out the procedures related to the discharge component minutes. Currently, households, hotels and restaurants do not discharge wastewater into the sea as before, except for the rain is too heavy and the water cannot be pumped in time to the treatment station, then it flows into the sea. The contractors always arrange the workers to control the road in the rush hours and regularly clean the construction to limit the noise and dust."
— Wastewater Manager in Son Tra district, June 2021

"I can't swim due to the regulation of authority. I usually ride a bicycle in the afternoon and do exercise at home. The wastewater treatment construction is in the last period so it is quite dusty. I hope that the project will be completed soon for safe travel." — Citizen, June 2021

"The garbage in the sea is less than before since no one swims. It is in the summer so there is no wastewater flowing to the sea. Our work is affected due to the pandemic, we work one day and off one day so our salary is being decreased 40%. I hope that the authority has many policies for workers who are affected by the pandemic." — Lifeguard, June 2021

"Recently, there is less garbage in the sea because people are forbidden to swim in the sea because of the pandemic. People just ride bicycles, jog along the beach or exercise themselves at home. The amount of wastewater flowing into the sea is also less than before. The wastewater treatment plant on Vo Nguyen Giap street is under construction, so the road is a bit dusty and difficult to travel. Since it was a wastewater collection and treatment project, everyone feels alright with it and wishes the project would soon be completed." — Citizen, June 2021

Quarter 4

ACTION: Construction is nearly complete on the wastewater treatment project, which is already preventing wastewater from flowing into the sea.

"The wastewater treatment plant is in the last stage of construction, it is expected to complete by the end of 2021. The traffic isn't difficult as before by the good arrangement of the project management board.

There was a big storm in the early of September with the high rainfall in Da Nang but it doesn't affect much to the project. Climate change is the great concern for us nowadays and I believe that the government and management board are ready to adapt with this in our building plan."
— Wastewater Manager in Son Tra District, Sept. 2021

"Due to the social distance, people are not allowed to swim in the beach and there is less garbage than before. There is only a little trash from the fishing, but the environmental workers regularly clean up this area. We hope that the tourists and citizens are aware of the environmental protection to keep the beach clean and beautiful."
— Project Officer in DONRE, Sept. 2021

"I am just allowed to go out some days ago since the strict social distance. It is very convenient for us to travel on Vo Nguyen Giap street now, there isn't wastewater flowing into the sea anymore."
— Citizen, Sept. 2021

Journey Map Summary

In this 2-year map, COVID-19 delayed completion of the wastewater treatment plant by over a year. However, beach closures and stay at home orders for COVID-19 prevention also had a positive effect by reducing the amount of trash on the beach. The city has also seen record rainfall in recent years. The wastewater treatment plant and accompanying drainage system will hopefully position the beach to adapt to these and other climate change-related issues in future years.

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How Does This Story Connect to the Da Nang Systems Map?

Loop 7: Unexpected Consequences

With city investment, the natural beauty and welcoming hospitality of citizens has made Da Nang a desirable place for people to live and visit. However, as the population grows due to tourism or new residents, it becomes increasingly difficult for the city to keep up with the growing and changing demands of the population. This pressure to address new challenges quickly results in short-term fixes that do not fully solve the problem, and may lead to unintended consequences. As a result, there is an increased strain on city resources - including the financial cost, the environmental impact, and the burden on the most vulnerable members of society.

Example 1: With strategic locations and favorable natural conditions, the city has developed rapidly since the 2000s. Investment attraction keeps increasing, particularly in tourism. As the focus remains on economic development, there are unexpected results damaging the environment and local residents; for example, challenges to waste management and shortage of water supply. In the summer of 2019, people in Son Tra district faced serious issues of water shortage, partly because of the huge number of tourists. This created conflicts between local residents and hotel managers, though it was not serious. Notably, the large number of visitors increased the amount of wastewater discharged to the coastal zone. Those unexpected consequences will reduce the beauty of the city that drive tourism and investment without proper adjustments of leadership, policy and city planning.

Example 2: Fishermen were invited to participate in conservation activities by the city. They changed their practices to follow the new policies, but big vessels from other areas came to the coastal zone and used devastating fishing gear to catch even small or protected species, completely undermining their efforts and threatening their livelihood. Unfortunately, due to staffing limitations, when local fishermen call navy/security, they are usually not able to respond in time. As a result, many fishermen were no longer willing or able to participate in conservation efforts. This example demonstrates that, despite positive conservation policies, without effective monitoring and enforcement in place there can be significant unintended consequences that are harmful to both the environment and promoting citizen investment in conservation.