

Damage and Reconstruction in the City of Natori, Miyagi Prefecture

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Introduction

This paper summarizes (A) regional characteristics and (B) the disaster/reconstruction process, with regards to the damage and reconstruction process of the city of Natori in Miyagi Prefecture. This project is managed by the author as part of the field survey group (tsunami-affected areas) of the Grant-in-Aid for Scientific Research A Project.

The damage and reconstruction process in the coastal zone of the city of Natori (Fig. 1) have already been summarized in Uchida (2019), so please refer to that paper for details. A report will be made in this paper by significantly revising the information provided there, adding further details.

A. Regional Characteristics

The scale of the disaster in Natori was large in Yuriage and Shimomasuda districts (the center of damage was in Kitagama district, Fig. 1). However, the regional features and the reconstruction process differed greatly within the same municipality (Uchida, 2019). Hence, the following descriptions will address the city of Natori as a whole, as well as Yuriage and Kitagama districts separately.

A-1 Overview of Demographic and Industrial Structures

① Natori as a Whole

The city of Natori in Miyagi Prefecture was preceded by the town of Natori, and was the result of a merger of six towns and villages (the towns of Masuda and Yuriage; and the villages of Shimomasuda, Tatekoshi, Medeshima, and Takadate) in 1955, shifting to a municipal government in 1958. The Sendai Airport (located south of the central city of Sendai) and aerial gateway to the



Figure 1 Natori City Coastal Map (Natori City, 2015:5)

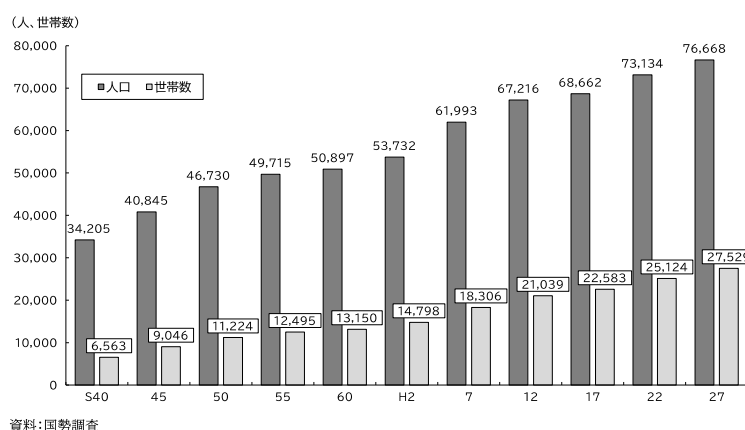


Figure 2 Trends in Population and Number of Households (Natori City, 2020a:2)

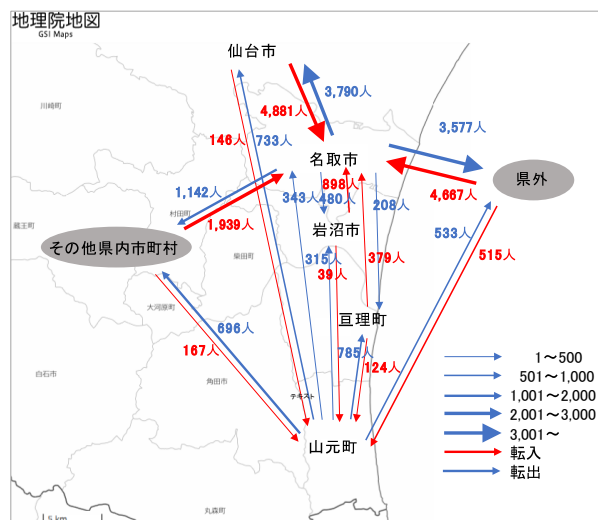
Tohoku region are there. Railroads include the JR Tohoku Main Line and the Sendai Airport Access Railway. Roads include the Tohoku Jukan Expressway and the Sendai Eastern Highway. The city has high traffic accessibility.

According to a 2010 census prior to the earthquake, the city had a population of 73,134 people and 25,124 households. As a commuter city for the Sendai metropolitan area, Natori's population and households steadily grew after housing complexes began to be built in the western area in the 1980s, and access lines near Sendai Airport were developed in the east in the 2000s. According to national urban “livability rankings” by Toyo Keizai, the city has been the ranked 1st seven times in a row since 2010 in the Hokkaido / Tohoku region, and was nationally ranked 25th in 2010, 12th in 2012, 31st in 2013, 10th in 2014, 4th in 2015, 8th in 2016, and 11th in 2017. The city has been deemed a comfortable city in which to live (Toyo Keizai, each year).

In the 2015 census after the earthquake, the city had a population of 76,668 people and 27,529 households, with an increase of 3,534 people and 2,405 households for the city as a whole compared to 2010 (Fig. 2). Although many affected coastal municipalities (such as Iwate Prefecture) suffered from population decline, the Great East Japan Earthquake and tsunami conversely spurred a population increase in Natori. The Mitsubishi Research Institute (2018) analyzed changes in residential zones before and after the Great East Japan Earthquake and tsunami in several municipalities affected by the tsunami from 2010 to 2015. As shown in Fig. 3, Natori witnessed excess migration from outside the prefecture: from Sendai in the north, from the city of Iwanuma and the towns of Watari and Yamamoto in the south, and from all other municipalities in the prefecture.

Looking at the state of industry, there is the Aeon Mall Natori Airi (the largest in the Tohoku region in terms of commerce); the Sapporo Brewery Sendai Plant; food processing industries (such as those for marine product processing centered in the Yuriage district); and telecommunication device production (such as Sendai Nikon) in terms of industry. Furthermore, the area is known as a production center for carnation, water celery, and blood clams in terms of agriculture. There are also

図表 28 名取市・山元町の周辺地域における震災前後の居住地の変化（2010年→2015年）



出所) 「平成 27 年国勢調査結果」(総務省統計局) 及び、国土地理院 web サイト (<http://www.gsi.go.jp/>) の白地図 (<http://maps.gsi.go.jp/development/ichiran.html>) により作成。

注 1) 名取市・山元町における、転出入数が 30 人以上の隣接する沿岸市町村と県庁所在地への移動数を示した。なお、2010 年と 2015 年における居住地の違いを転出・転入として表記しているため、5 年以内に他地域に移動して元の地域に戻った場合には移動として集計されていない。

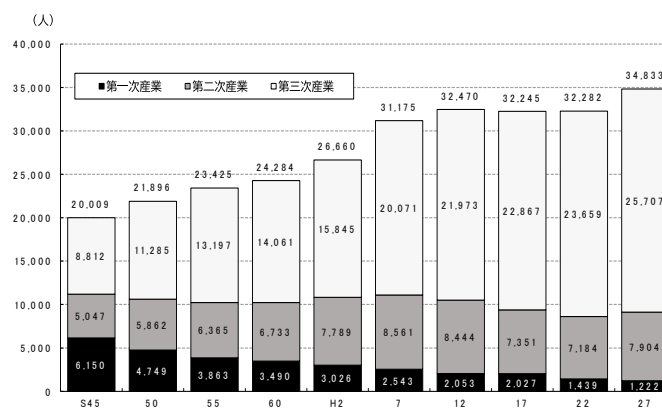
注 2) 名取市と山元町間の転出入は重複するため、山元町から名取市への転出として整理した。

注 3) 「その他県内市町村」の転入者数の上位 3 市町村は、名取市は柴田町 277 人、石巻市 201 人、多賀城市 195 人であり、山元町は角田市 29 人、柴田町 21 人、丸森町 19 人である。

注 4) 「県外」の転入者数の上位 3 県は、名取市は福島県 1394 人、東京都 419 人、岩手県 322 人であり、山元町は福島県 164 人、北海道 41 人、千葉県 28 人、東京都 28 人である。

Figure 3 Changes in Residential Areas Before and After the Earthquake (Mitsubishi Research Institute, 2018: 50)

(Mitsubishi Research Institute, 2018:50)



資料: 国勢調査

(注) 産業分類不能の産業は含まれていない。

Figure 4. Employment Population by Industry (Natori city, 2020a:4)

tourist resources such as the morning market at Yuriage Port.

Primary industry employment population has been on a steady decline, and the tertiary industry employment population has seen a rising trend (Fig. 4). The number of people employed in secondary industries peaked in 1995 and has been on a declining trend since then, but increased from 2010 to 2015.

There are 11 districts in Natori, with elementary school districts as the units, and community centers established in each district. Municipalities serve as the basis of the districts. The number of districts has grown as commuter towns near the Sendai metropolitan area have increased. Of these districts, the Great East Japan Earthquake and tsunami devastated the Yuriage district (2,551 households and 7,013 people at the end of February 2011)—which is a coastal zone with fishing ports—as well as rural areas in Shimomasuda district, including Kitagama district (123 households and 396 people at the end of February 2011).

② Yuriage District

The results of the 2010 census are shown here. A total of 1,656 households and 4,905 people were extracted from Yuriage 1 through 7-chome in Yuriage district, where most of the population was concentrated. Though it was once the most populous district of Natori and flourished as a fishing town based in Yuriage Port, its population has been declining since its peak in 1955.

The industrial structure was as follows: fishing (commercial classification): 1.6%, 35 people (Natori: 0.1%, 41 people); agriculture, forestry, and fishing (occupational classification): 2.8%, 61 people (Natori: 4.5%); those who work from home: 11.9% (Natori: 9.4%). The fishing industry is no longer a core sector. The town has gradually become a commuter town for the Sendai metropolitan area.

The aging rate was 28.0%, which was higher than the 19.1% in Natori.

③ Kitagama District

The results of the 2010 census are shown here. Kitagama district, located in the center of Shimomasuda district, is based on agriculture and has 107 households and 390 people.

The industrial structure was as follows: agriculture (commercial classification): 39.9%, 81 people (Natori: 4.3%); professional classification: 39.9%, 81 people (Natori: 4.5%); those who work from home: 46.8% (Natori: 9.4%). Agriculture was the core industry.

The aging rate was 32.0%, which was higher than the 19.1% in Natori.

A-2 Damage Situation

Natori (2015) can be used to roughly summarize the damage situation (e.g., building damage, number/ratio of deaths and injuries, data on flooded zones, number of evacuees, population change after the earthquake, damage to administrative institutions, damage to core industries, damage to evacuation centers, damage to welfare institutions, etc.) as follows:

Building damage was as follows: totally destroyed: 2,801 buildings; partially destroyed: 1,129 buildings; partially damaged: 6,166 buildings; flooding under the floor: 1,179 buildings. There were 23,310 buildings in Natori according to the 2008 Residential Land Statistical Survey, so the total collapse rate was 12.0%.

The number/ratio of fatalities and injuries were 912 direct deaths and 42 related deaths (Miyagi Prefecture, 2019). Since the 2010 census counted 73,134 people, the mortality ratio, when using this number as the denominator, was 1.3%.

Data for flooded regions showed a total of 27 km² for the inundated surface area. Since the surface area of Natori is 98.17 km², the inundation rate was 27.5%.

As shown in A-1①, the population rate after the earthquake has seen a rising trend for the city as a whole. However, looking at trends for all of Yuriage district, the population of 5,612 people and 2,013 households at the end of February 2011 fell to 1,634 people and 787 households at the end of February 2020 (see “Population by district” on Natori’s website). It is expected that housing reconstruction will naturally occur, and a certain degree of population inflow will happen in the future, but this is undeniably a considerable decline.

As for damage to administrative institutions, those that were dismantled due to earthquake damage included the Natori City Library, Masuda Community Center, and Citizen’s Activity Support Center; those dismantled due to tsunami damage included the Cycle Sports Center, Yuriage Seaside Pool, Geriatric Welfare Center, Yuriage Daycare Center, Yuriage Children’s Center, Yuriage Community Center, Working Women’s House, Yuriage Gymnasium, Miyagi Prefectural Agricultural High School, Municipal Fire Department Yuriage Branch Office, Yuriage Junior High School, and Yuriage Junior High School.

As for damage to core industries, 1,561 ha of agricultural land was affected by the tsunami. Since the size of cultivated land is 2990 ha, the damage area ratio was 52.2%. The total amount of damage to agricultural facilities was 45.8282 billion yen, the total amount of damage to fishery facilities (fishing ports, the prefectural fishery cooperative Yuriage branch) was 6.2682 billion yen, and the total amount of damage to business establishments of the Natori City Society of Commerce and Industry was 23.46627 billion yen.

As for damage to evacuation centers, the total amount of damage to kindergartens was 6.487 million yen, the total amount of damage to elementary schools was 4.02051 billion yen, and the total amount of damage to junior high schools was 3.07761 billion yen. As for damage to educational facilities, Masuda Community Center, Yuriage Community Center, and Yuriage Gymnasium were also rendered unusable.

As for damage to welfare institutions, the Yuriage Nursery Center and the Elderly Welfare Center were totally destroyed.

B. Information on the Regional Disaster/Reconstruction Processes

B-1 The Disaster/Reconstruction Process in Natori

The five stages of the disaster process shown in Urano (2019) are as follows: ① damage occurrence based on pre-disaster circumstances; ② emergency evacuation; ③ evacuation life; ④ provisional living; and ⑤ recovery/reconstruction. For the time being, an outline of the main events and transitions at each stage of the disaster process in Natori are demonstrated along in a chronological table (Table 1). The chronological table also depicts the situation in the city of Iwanuma, which is adjacent to Natori, where the author has conducted surveys to date.

With regards to stage categorizations, ② is the stage of evacuation at temporary evacuation centers, ③ is the stage of evacuation center living, ④ is the stage of provisional housing living, and ⑤ is the stage of living in

public housing following a disaster. An overall flow of reconstruction, especially events leading to resident agreements and policy decisions, is described in B-3.

① Damage occurrence based on pre-disaster circumstances

The damage situation has already been presented in A-2. Issues in Natori as a whole included the lack of connections immediately following the earthquake, and concerns over aftershocks (Department for the Study of Contemporary Society, Faculty of Comprehensive Human Sciences, Shokei Gakuin University, 2012: 25). Some people lost their lives when they went to see their families and acquaintances in areas that later became tsunami-affected zones due to the lack of communication. The situation of fatalities and evacuations in Yuriage district was detailed by the NHK Special Interview Team (2013).

② Emergency evacuation phase

There were 11,233 evacuees and 52 evacuation centers at the disaster's peak on March 11, 2011.

At this stage, there was a serious shortage of gasoline, kerosene, food, beverages, and daily necessities, in addition to a lack of communication, as mentioned above, and concerns over aftershocks (Department for the Study of Contemporary Society, Faculty of Comprehensive Human Sciences, Shokei Gakuin University, 2012:25).

In Natori, the disaster prevention administrative radio in Yuriage district was damaged by the earthquake. Family members of the victims filed a lawsuit against Natori, and a settlement was reached in March 2020 (“Settlement reached in Natori City Council on Yuriage Tsunami Litigation,” Kahoku Shimpō, March 7, 2020).

From March 18 to August 12, 2011, the Natori Municipal Disaster Volunteer Center was established and operated by the Natori Municipal Social Welfare Council to accept volunteers and match them with affected people.

③ Evacuation life stage

Perhaps because of the large number of evacuees during the evacuation life stage, evacuation centers were not organized or consolidated at the conventional municipal level. The construction of prefabricated provisional housing began on March 28, 2011, and 889 units were built in eight locations within the city (Fig. 5). Residents began moving into prefabricated provisional housing starting on May 3 of that year, and the evacuation centers were closed



Figure 5 Location of Temporary Housing in Natori City

(Natori city, 2015:9)

on June 23, 2011.

④ Provisional living stage

At its peak, the number of residents in emergency provisional housing in the city was split roughly in half between pre-fabricated provisional housing and presumptive provisional housing, with more than 2,000 households and fewer than 6,000 people. The scale of damage in Natori was large, and emergency provisional housing (including public housing) was installed at ten sites (Fig. 5). However, a single consolidated tract of land could not be obtained. For this reason (despite that traditional neighborhood associations were considered during the move-ins into each provisional housing unit), the locations were scattered across each unit, and there was no opportunity to create an environment that promoted exchanges among residents in different provisional housing units. However, Mitazono provisional housing units Nos. 2 and 3 were mostly composed of residents in Shimomatsuda district, and this unit was able to maintain the cohesiveness of the traditional neighborhood association.

In August 2011, the Natori City Social Welfare Council opened the Natori Reconstruction Support Center Hiyori to carry out reconstruction support activities centering on livelihood support. From there, lifestyle aid consultants were deployed to each prefabricated provisional housing assembly center, where they continued activities such as cooperating with the local provisional housing communities and observation. Furthermore, with regards to presumptive provisional housing, support activities occurred such as the opening of an exchange salon (Natori City Support Center Dot.Natori), commissioned by the Japanese Overseas Cooperative Association (JOCA). Dot.Natori is still holding salon activities for home-reconstructed households.

⑤ Recovery and reconstruction stage

As of September 2012, the affected areas in Shimomasuda district were approved by the national government, and a new town was established in Mitazonokita district through the Disaster Prevention Group Transfer Promotion Project. Disaster public housing was commenced in July 2014, and new tenants moved into housing in March 2015. A Mitazonokita town opening event was held on October 4, 2015, and the Mitazonokita neighborhood association was founded on the same day.

In November 2013, Yuriage district decided to develop new towns through the combined use of the Disaster-Affected Municipalities Reconstruction Rezoning Project and the Disaster Preparedness Collective Relocation Promotion Project. Disaster public housing was built in December 2015, and new tenants moved into housing in June 2016. A Yuriage district town opening event was held on May 26, 2019, and an earthquake disaster memorial park was opened on the same day. A Yuriage central neighborhood association was created in March 2019.

A Natori declaration of reconstruction completion was issued on March 30, 2020, and on April 28 of the same year, the final residents in the prefabricated provisional housing moved out, and the last provisional housing units in Miyagi Prefecture were closed.

B-2 Involving Experts and Supporters in Natori

As will be discussed later in B-3, the following associations were founded for the reconstruction of Natori, and

experts were involved in each of them.

- Natori City New Future Conference (May–August 2011; members of Tohoku University, Miyagi University, etc.)
- Yuriage Reconstruction Town Development Promotion Council (November 2011–September 2013)
- Natori City Disaster Relief Liaison Committee (April 2012 onwards, Shigeo Tatsuki [Doshisha University] and others)
- Yuriage District Urban Development Council (May 2014 onwards, Taiyo Sakaguchi [National Institute of Technology, Sendai College])

B-3 Regarding the Status of Reconstruction

In the following, we will add new descriptions based on Uchida (2019) and review the reconstruction process.

① Natori as a Whole

Natori established the Natori City New Future Conference to make proposals when formulating earthquake disaster reconstruction plans, which reflect citizens' intentions. The council is comprised of 24 members. The chairperson is a former graduate school professor, and the two vice-chairmen are current graduate school professors. Six other members are also academic experts associated with universities, four are federal/prefectural employees, and the majority are external experts. Local officials include three individuals from neighborhood associations (Yuriage, two members) and administrative districts (Kitagama, one member), two from local elementary/junior high school parent-teacher associations, and others from agricultural cooperatives, fishermen's cooperatives, and business/industry associations. The first meeting was held on May 22, 2011; eight subsequent meetings were held. On August 23 of the same year, the New Future Conference submitted a draft proposal to the mayor for the development of the Natori earthquake disaster reconstruction plan.

The minutes of the plenary meeting show that there were groups of people who were split in an opinion exchange meeting over the reconstruction of Yuriage district, held in provisional housing, between those who prioritized safety and wanted to live in a separate area in the west, and those who wanted to return to Yuriage as soon as possible. There were already concerns at this stage that a consensus could not be reached between the residents and that they might become separated. However, when summarizing the proposals, five local committee members agreed to local reconstruction and three agreed to collective relocation, so a reconstruction town development plan based on local reconstruction was adopted.

A regional round-table discussion and a citizens' intention survey on earthquake disaster reconstruction was conducted, and the Natori earthquake disaster reconstruction plan (FY 2011–2017) was finally prepared in October 2011.

② Yuriage District

Through the Disaster-Affected Municipalities Reconstruction Rezoning Project, the plan aimed to conduct local reconstruction in Yuriage for disaster prevention by establishing a T.P. 7.2-m embankment in coastal areas and

raising 70 ha of residential zones by T.P. 5 m. The Yuriage Reconstruction Town Development Promotion Council was established in December 2011 to specify the reconstruction plan for the subsequent development of Yuriage as a town. There were 15 members: four associated with the Yuriage district neighborhood association, five associated with open recruitment, three associated with industrial groups, and three in town development associations, with the office managed by the Reconstruction Town Development Section of the Earthquake Disaster Reconstruction Department of Natori. The city aimed to approve of reconstruction projects in July 2012, so the council was scheduled to be held by June 2012. However, there are many objections to local reconstruction due to concerns over tsunamis and other factors. Therefore, individual interviews were held from July–August 2012 for all households regarding future project plans.

Intention survey results showed that approximately 34% of citizens wanted to rebuild in Yuriage district and 54% wanted to sell the land, so the city considered combining the Rezoning Project based on local reconstruction in Yuriage district with the Disaster Preparedness Collective Relocation Promotion Project, which involved relocation out of the district. However, major differences in the support content affected people between the two projects, and financial difficulties resulted in the combined proposal being scrapped for the time being.

The city reduced the area to be raised from what was originally planned in February 2013. Furthermore, the city proposed a combined plan whereby coastal households established in non-residential areas would be accepted into disaster public housing in Yuriage through the Disaster Preparedness Collective Relocation Promotion Project. However, residents’ desire to rebuild within Yuriage district fell further to approximately 25%. During this time, various media outlets reported difficulty forming a consensus on the future prospects of Yuriage district.

The scale of the reconstruction projects was further reduced, and the project was promoted by combining the Disaster-Affected Municipalities Reconstruction Rezoning Project with the Disaster Preparedness Collective Relocation Promotion Project. First, on September 11, 2013, approximately 65 ha of the western part of Yuriage was designated as a disaster risk area, and the Ministry of Land, Infrastructure, Transport and Tourism agreed to the Disaster Preparedness Collective Relocation Promotion Project. Moreover, the reconstruction project, as a combination of the Rezoning Project and the Disaster Preparedness Collective Relocation Promotion Project, was approved by Miyagi Prefecture on November 22 of the same year, and the Rezoning Project plan for approximately 57 ha was decided. Of this, around 32 ha was raised to 3 m on average to ensure that the land was 5 m above sea level. Together, the total reconstruction project area was about 122 ha.

The commencement ceremony for the Rezoning Project was held on October 20, 2014, and the project was initially scheduled to be completed in March 2018. Disaster public housing started to recruit tenants in the autumn of 2015, detached housing was scheduled for move-in in the spring of 2016, and apartment housing was scheduled for move-in in the spring of 2017. However, actual phase-one construction in Yuriage began on December 23, 2015, and of the phase-one detached houses in Yuriage (90 units), 10 units were built in June 2016, 52 in October 2016, and 13 in December 2017. As for apartments, 50 units were built in Takayanagi district (completed in June 2017), 140 units during phase one in Yuriage (completed in July 2017), 40 units during phase two in Yuriage (completed in November 2017), and 105 units during phase three in Yuriage (completed in November 2018). There were 270 detached houses and 385 apartments in Natori, including those in Shimomasuda district (discussed later), for a total of 660 units by December 2018.

The Yuriage Reconstruction Town Development Promotion Council, introduced earlier, was to have twenty meetings until September 2013, when consent from the Minister of Reconstruction Projects would be obtained. Upon reflection of the fact that it was led by the administration, the council was subsequently dissolved in order to expand its operations. Afterward, an opinion exchange meeting was held in January 2014 to create a new organization, and the Yuriage District Town Development Council was newly founded on May 11, 2014 due to the efforts of members of the Preparatory Care Council, who gathered through self-recommendations and other suggestions.

The council aimed to create a vision and image for the town and its development through opinion exchanges between residents, and to act as a point of entry for Natori and associated institutions to discuss and propose specific town plans related to town development for Yuriage district. As of August 2018, the qualifications for membership are as follows: “People of Yuriage, such as those who wish to reside in or reconstruct Yuriage district, those who wish to move into disaster public housing in Yuriage district, those who have land in Yuriage district, and individuals/companies who conduct business in Yuriage district.” As of August 2018, 370 households are members.

Actual operation of the council involves hosting caretaker meetings in which a town development consultant assisting the office, and city officials, act as observers. As reconstruction project work of Yuriage district (e.g., the raising of land) continued, the council submitted proposals for town development to Natori, from its first proposal in September 2014 to its seventh in May 2018. Development of the town made such headway that the city of Natori generally accepted the council’s requests.

③ Shimomasuda District

On the other hand, the districts of Kitakama, Hiroura, Sugigafukurominami, and Sugigafukurokita, located in the farmlands of Shimomasuda, investigated recovery/reconstruction in the affected areas starting in the early stages as a pillar of relocation through the Disaster Preparedness Collective Relocation Promotion Project. The Kitagama District Disaster Preparedness Collective Relocation Council was founded as its main component on April 22, 2012; this council requested that the northern side of Mitazono Station on the Sendai Airport Access Line be a collective relocation destination. As a result, the Minister of Land, Infrastructure, Transport and Tourism and the Minister of Agriculture, Forestry and Fisheries—who were advancing the Collective Relocation Promotion Project—agreed to transfer approximately 5.5 ha of farmland on the northern side of Mitazono Station on September 10, 2012.

Construction work for 162 households (70 residential lots, 92 disaster public housing units) in the relocation site commenced on October 28, 2013. A groundbreaking ceremony for disaster public housing was held on July 23, 2014. Tenants moved into the apartments in March 2015, and into the detached housing units in August 2015. A Town Opening event was held on October 4, 2015, and the Mitazonokita neighborhood association was established on the same day.

④ Reconstruction Challenges and Objectives

The following six issues for reconstruction emerged in the Natori City Earthquake Disaster Reconstruction Plan (Revised) (Natori, 2017: 6-8).

- ① Increase disaster response capabilities and restore healthy and secure lifestyles
 - ② Strengthen community ties and promote development of the town that brings together citizens' strengths
 - ③ Create vitality and employment through the rapid recovery and business development of industrial infrastructure and local resources
 - ④ Pass knowledge on to the next generation, and develop a new charm and energy in the local community through proactive cooperation
 - ⑤ Respond to the social needs of the next generation to create a new life stage where multiple generations can live with peace of mind
- + As a new issue, ⑥ form bustling towns by promoting settlement and expanding exchange populations

The reconstruction goals are summarized in Table 2 under the three categories of lifestyle goals, industrial goals, and town goals. Perspectives for achieving the image and goals of reconstruction are also shown.

For reconstruction projects, the website, “Earthquake Disaster Restoration Project Map” (<https://www.city.natori.miyagi.jp/restoration/>) was created. A total of 45 projects, including the four categories of “town-houses,” “road-park,” “industry-tourism,” and “disaster-recovery” are listed according to “country,” “prefecture,” and “city” projects. The current status and remaining issues are presented in PDF files.

Table 2 Reconstruction Goals (Natori, 2017: 15)

		Image of reconstruction	Perspective for achieving the goals
Lifestyle goals	① Mutual support, lifestyle with strong bonds	<p>◇ While valuable assets have been lost alongside many precious lives, the bonds, traditions, and pride of those who have rebuilt their lives and rebuilt themselves remain healthy.</p> <p>◇ The power to solve local problems on their own and mutual bonds are firmly rooted in the community, and they maintain their health and lives securely while watching over each other.</p> <p>◇ Children who witnessed the earthquake are also growing up energetically while communicating with the people of the community, without losing their attachment to the city.</p>	<p>● Elimination of physical and mental damage caused by the earthquake and fostering future leaders</p> <p>● Support for family (individual) livelihoods and housing reconstruction</p> <p>● Strengthening community bonds and fostering daily efforts toward disaster mitigation</p> <p>● Building networks where individuals can connect with communities</p> <p>● Building a system of cooperation among governments, citizens, corporations, and non-profit organizations (NPOs)</p>

Industrial goals	② Industries that accumulate and collaborate by using local resources and the Sendai Airport	<p>◇ Fisheries, marine product processing, and agriculture are functionally restructured, intensified, and strengthened, and high-value-added local products are branded.</p> <p>◇ Placement of companies that can meet new demands through industrial clusters, and which contribute to the local revitalization and employment of young people.</p> <p>◇ Natori-like scenery and natural environment are restored, Sendai Airport and Yuriage area are connected by networks, and sightseeing and exchanges are becoming active.</p> <p>◇ New regional resources and tourism routes with excursions have been constructed, the exchange population towards the beach has increased, and new industries bring prosperity to the region.</p>	<p>● Rapid commencement of industrial reconstruction on the eastern side of Teizan Canal in Yuriage as industrial land</p> <p>● Early revitalization of industries rooted in local communities and further strengthening of clusters and collaboration</p> <p>● Development by introducing private sector vitality, such as facilities that form the basis of industrial clusters</p> <p>● Establish regional brands that feel like Natori</p> <p>● Development of new industries and tourism industries, utilizing Sendai Airport and Teizan Canal</p> <p>● Creating local community charm and opportunities for tourism with excursions</p>
Town goals	③ A town where a diverse generation can feel the future and live with peace of mind	<p>◇ People are living with a sense of security in urban areas with comprehensive safety considerations, including tsunami countermeasures.</p> <p>◇ Facilities and roads that support people's lives are arranged in a well-balanced manner in a living area centered on schools and community centers, and they live comfortably.</p> <p>◇ The elderly, younger generations, and their children live while enjoying Natori's climate and nature, and the attractiveness of their lifestyles spurs new housing development.</p> <p>◇ More and more people migrate into the area as a city of choice, which includes features like the Yuriage morning market (which boasts the highest customer attractions along the sea, rivers, canals, and prefectures), and bicycle-friendly town development.</p>	<p>● Establish a disaster-resistant town structure where one can feel the sea breeze</p> <p>● Planned placement of earthquake-resistant housing complexes to protect against disasters</p> <p>● Protect schools, community facilities (etc.) throughout the community</p> <p>● Develop evacuation centers (facilities) within walking distance of towns.</p> <p>● Secure spaces for the repose of souls, lessons learned from the earthquake, and spaces to pass on stories of the path to reconstruction</p> <p>● Promote and implement measures for towns to encourage migration and resettlement</p>

With regards to the reconstruction of infrastructure in particular, Yuriage Elementary and Junior High School (April 2018), Yuriage Daycare Center (April 2019), Yuriage Community Center and Gymnasium (May 2019), and the Municipal Fire Department Yuriage Branch Office (April 2019) were each rebuilt following their destruction. Furthermore, the industrial facility of Kawamachi Terrace Yuriage (April 2019) and an earthquake disaster memorial park (May 2019) were new facilities created after the earthquake. The Natori City Cycle Sports Center, located in Yuriage district, will be rebuilt as an accommodation facility called Natori Yuriage Hot Springs in 2020 due to hot springs that have been mined in this area.

On March 30, 2020, a Natori declaration of reconstruction completion was issued by the mayor, as follows: “Ten years have passed since the Great East Japan Earthquake and Tsunami, and we still have issues to face going into the future. However, we continue to develop the functions needed to revitalize the town, such as the reconstruction of residences and affected businesses, infrastructure development, and the disaster recovery of public facilities. Using the completion of recovery/reconstruction projects accompanying infrastructure development as a milestone, we declare, on March 30, 2020, that we will continue to engage in efforts to provide mental care to affected individuals, develop communities in coastal areas, and attract companies. We have completed the reconstruction from the earthquake” (Natori, 2020b).

Although Natori has been slow to reconstruct its housing environment (e.g., the development of disaster public housing) compared to other municipalities, various environmental improvements are now being made in the city. Meanwhile, as shown in A-2, population decline is significant when only looking at Yuriage district. Comprehensive examination of projects related to the reconstruction process will be necessary in the future.

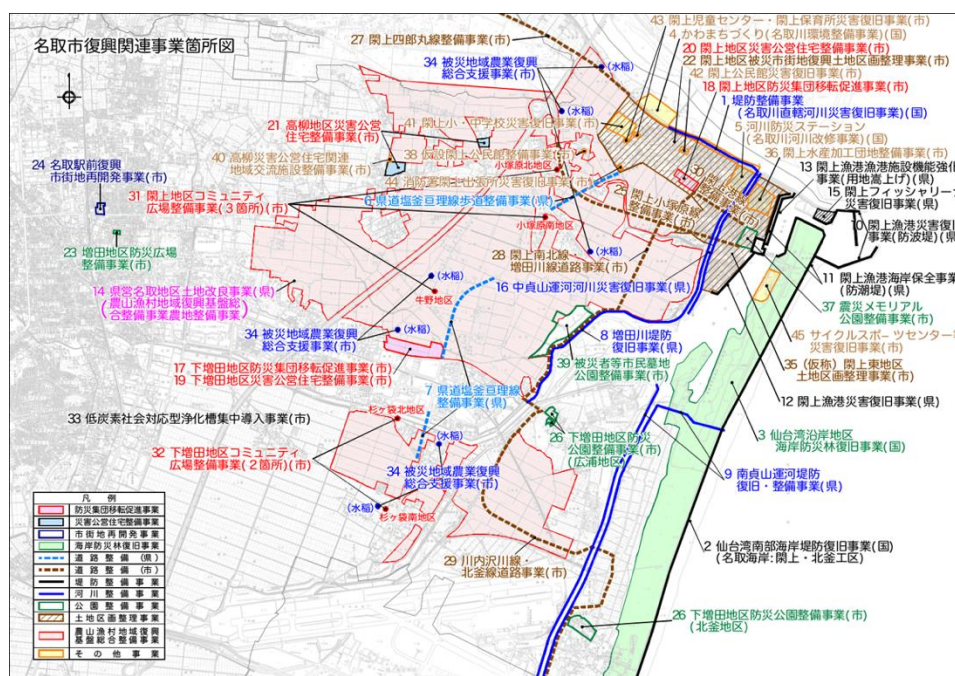


Figure 6 Earthquake Disaster Reconstruction Project Map

(Natori City: <https://www.city.natori.miyagi.jp/restoration/>)

Acknowledgements

Many people, including individuals from Natori City Hall, worked with us to prepare this paper. We thank them for their cooperation.

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