Planning for Post-Disaster Recovery in New Orleans after Hurricane Katrina

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Abstract

This paper examines the recovery planning process and framework after Hurricane Katrina (2005), the most destructive natural disaster in American history. Katrina's storm surge caused several different levee breaches in greater New Orleans, submerging eighty percent of the city, and causing more than 1,300 casualties. Herein four criteria were used to evaluate the early stage of recovery planning in New Orleans: 1) A clear future vision for recovery based on the lessons learned from the disaster, 2) Linking “individual recovery” with “urban and neighborhood level physical recovery”, 3) Citizen participation, and 4) Planners' leading roles. These criteria were established by reviewing previous papers on recovery planning from another urban disaster, the Great Hanshin Earthquake (1995). The characteristics of recovery planning in New Orleans based on the four criteria are as follows: 1) Development of a strategic planning framework with a clear vision, comprehensiveness of recovery goals, and pursuit of new urbanism in neighborhood level recovery, 2) Creation of a clustering program, which is proposed to encourage residents to rebuild in clusters at higher elevations, to help ensure vibrant neighborhoods and more efficient infrastructure costs in the context of a smaller overall population, which has the possibility to serve as a model of coordination between individual and neighborhood recovery, 3) Encouragement of citizen participation on citywide and neighborhood levels, and 4) Development of significant leading roles for private planners setting the planning framework and process of recovery. As stated above, there are positive aspects of the recovery planning process, which may be useful in improving our existing Japanese recovery planning model. However, a multitude of present and future challenges exist for New Orleans recovery in the implementation stage, such as prolonged repopulation due to a delay in rebuilding housing and social services, flood risk management by individual’s risk acceptance and not by governmental control, as well as the lack of funding and human resources to implement mitigation and management of long-term recovery.

Keywords
Post-Disaster Recovery Planning, Flood Risk, Mitigation, Stakeholder Involvement, Hurricane Katrina, Great Hanshin Earthquake

1. Introduction

The catastrophic aftermath of Hurricane Katrina presents the enormous challenge of rebuilding along the Gulf Coast. Hurricane Katrina’s storm surge washed over the levees and breached the floodwalls of the City of New Orleans. Water stood over 80 percent of the city for nearly two weeks, and 180,000 housing units were severely damaged or destroyed. In addition to the physical damage, Katrina resulted in the largest relocation of citizens; the 100,000 to 120,000 residents, who remained in the city, were rapidly transformed into the second wave of evacuees, greatly intensifying the need for shelter and housing. In December 2007, more than two years after Katrina, the population of New Orleans reached 295,448, 65%
of its pre-Katrina level of 454,863. Moreover, as of December 2007 the public service recovery is only 57% for hospitals, 62% for public schools, 68% for private schools, and 19% for regional transportation of the pre-Katrina level. There is a negative spiral; residents cannot return due to the poor public service recovery and the delay in recovery planning, while the decline in population leads to a delay of public services. New Orleans has faced two key challenges: how to allow residents, including those with fewer resources, the right to return without recreating pre-Katrina vulnerabilities and the inequities they represent and how to prioritize the limited redevelopment resources.

The term “recovery” encompasses “housing recovery”, “social recovery”, “economic recovery”, and “physical recovery”. This paper mainly focuses on citywide and neighborhood physical recovery in consideration with housing and social recovery on the individual level. This paper examines the recovery planning processes and framework, especially the Unified New Orleans Plan, after Hurricane Katrina (2005) and another urban disaster, Great Hanshin Earthquake (1995). The similarities between Hurricane Katrina (2005) and Great Hanshin Earthquake (1995) are citywide damage of the infrastructure, the loss of more than 100,000 housing units, and disruption of social service, etc.

To evaluate and analyze the planning process, the evaluation criteria from a previous research review on Great Hanshin Earthquake were employed. Using previous research results (1995-2005), the challenges for recovery planning are categorized into four points, which I set as evaluation criteria to analyze recovery planning in the Unified New Orleans Plan as well as positive progress, in order to learn lessons from Katrina and to improve the Japanese recovery planning system. Although the goal of recovery is defined as establishing a safer, more livable, and sustainable city, the content and recovery planning are considered complete when individual social recovery and urban physical recovery have been accomplished. However, this paper focuses mainly on the early planning process as it covers planning phase goal setting to strategy development since Hurricane Katrina to March 2007, when UNOP was completed. The methodology of the study was to interview government officials and private planners who committed to rebuilding planning in New Orleans.

2. Evaluation criteria for post-disaster rebuilding planning — From Great Hanshin Earthquake (1995) research review

2.1 Clear future vision for rebuilding based on the lessons from the disaster

The first criterion is to set a clear future vision for recovery based on the lessons from the disaster. Hence, strategic planning should be a good systematical planning tool to achieve a vision for recovery. In addition to the strategic planning framework, it is necessary that the citywide plan and neighborhood level plans are consistent.

Two months after the Great Hanshin Earthquake (2005), the City of Kobe government initially selected 24 targeted areas for land readjustment projects and urban redevelopment projects based on the extent of housing damage. Moreover, the city government developed a citywide recovery plan within six month. The citywide recovery plan was based on the “Kobe City Comprehensive Plan” (1995), which every municipal government prepares every 10 years, and had been developed just before the earthquake hit Kobe. It was effective in the sense that the recovery plan involved a comprehensive planning element, but there are some doubts about
the practicability and whether the recovery plan is capable of becoming an urban safety plan after applying the lesson regarding vulnerability from the earthquake. The targeted areas contained less than 4% of the urban area receiving a large amount of national government funding. On the other hand, the remaining urban areas received little government support, and had to work out independent neighborhood rebuilding efforts without recovery direction from the local government.

Hence, it can be said that Kobe recovery was constrained by the existing urban planning project, such as the Land Readjustment Project and Urban Redevelopment Project. The former is a major project applied after the Kanto Earthquake (1923) and World War II (1945) recovery, and is limited as it does not allow for locally owned recovery planning and implementation. In regard to this point, Murosaki (1998) has pointed out that, “It is important to pursue the ideal recovery by seeking the weakness and the deficiency of a city, and think of what we could provide to the next generation in terms of urban disaster reduction and a new model for civic society.” Thus, it is important to consider the safety element, the continuity of the local context, and the expansivity to pursue a more livable and sustainable urban society.

2.2 Linking “individual recovery” with “urban and neighborhood level physical recovery”

The second point is how a city and local communities can be linked to individual recovery, which represents housing and social recovery to urban and neighborhood level physical recovery. It is hard to claim that a city has achieved urban recovery from a disaster when only the utility and infrastructure have been restored without living and housing recovery for people who suffer from disaster. A city is built upon local living environments, which involve people and their daily activities. Campanella (2006) has noted that the human social fabric is as integral to recovery as the physical structure, and repairing this fabric is the biggest challenge New Orleans is currently facing. Mano (2006), who assisted the neighborhood-based recovery planning in Kobe, has pointed out that, “We need a rebuilding scenario developed from the individual’s feasibility of recovery, which needs to be not only from a citywide level, but also from a local level to restore urban functions.”

However, the urban planning project to ensure urban safety after the Great Hanshin Earthquake was limited to physical improvements, and did not focus on social recovery, which consists of housing recovery, restoration of the community network, and jobs, variety of elements. The Tokyo metropolitan government has prepared a booklet entitled, “Manual to Recover from an Earthquake” (2003), which is based on lessons learned from the Great Hanshin Earthquake, and this manual notes the importance of social recovery and that government sector must prepare multiple options for individual recovery. Moreover, this manual ranks social recovery as high priority in the infrastructure recovery plan. This is a great advancement since Great Hanshin Earthquake, but this manual lacks a planning technique, framework, and effective program to promote social recovery through cooperation with physical recovery. One reason for this discrepancy is that the Japanese government support to rebuild housing mainly consists of direct housing provisions as public housing for people who lost their homes, and not for assistance or compensation for individual housing reconstruction. Thus, it is difficult to sustain a local community network and promote community-based rebuilding.
2.3 Citizen participation

The third point is how citizens participate in the recovery planning process. After Great Hanshin Earthquake, the City of Kobe government called for a moratorium on building and rebuilding, and then selected targeted development areas within two months with little citizen participation. This policy led to intense resistance from the citizens, and numerous research papers have noted the lack of participation from citizens. In response, the City of Kobe government developed a “two stage urban planning process”, which stated that local governments are to set the urban structure and local communities should be involved in neighborhood-level rebuilding planning, but would be assisted by local architects and planners who are paid by the government. Although this “two stage urban planning process” involves citizen participation on paper, the selection of targeted areas and the planning approach to use the Land Readjustment Project and Urban Development projects has not changed. Maki (2006) has pointed out that “Community participation in Kobe was limited to local level rebuilding planning, and did not encompass a citywide planning vision and goals for recovery.” However, positive aspects include that more than hundred neighborhood community rebuilding committees were established, and as Sato (2006) has documented, a wide variety of community rebuilding practices and techniques in collaboration with local governments and professionals have been produced.

2.4 Planners’ leading role

The last point is the role that planners play to achieve a more livable and safer community coordinated with individual recovery. In Kobe, local government provided technical assistance fees for architectural and planning consultants, who helped assist community level rebuilding activities initiated by citizens. In particular, during the long-term recovery process from the Great Hanshin Earthquake, the planners’ roles became facilitators and coordinators for consensus building according to the local rebuilding plan. Planners did not propose a citywide future vision or urban design for rebuilding to the local government or the citizens. However, Murosaki (1998) has indicated that this technical input for rebuilding planning is essential in order to pursue ideal recovery. It is important for planners not only to assist with individuals’ desires to return to their normal lives, including living and housing recovery, but also to seek long term and broad based recovery.

3. Process and background of post-disaster rebuilding planning after Hurricane Katrina

3.1 Planning for post-disaster rebuilding in New Orleans – five citywide recovery planning schemes

The Unified New Orleans Plan, the formal name Citywide Strategic Recovery and Rebuilding Plan, was not finalized and reviewed by City and State governments until March 2007. In Kobe, the recovery project areas were selected within two months, and the “Kobe recovery plan” was released after six months. Why did it take New Orleans more than a year and half to develop a recovery plan? In the nearly two years following Hurricane Katrina, New Orleans has had four citywide recovery planning schemes: ESF-14, Bring New Orleans Back Commission, City Council, and the Unified New Orleans Plan. Although ESF-14 was FEMA’s latest attempt to engage in recovery planning, it had never
been used for a large disaster. ESF-14 was difficult to accomplish due to the scale of damage, lack of municipal employees, and inadequate planning process upon which to create project lists. Eventually, the ESF-14 plan had little influence within Orleans Parish.

The second planning was convened by the Mayor of New Orleans one month after Katrina, and was called the Bring New Orleans Back (BNOB) Commission. The BNOB was a top-down process driven by professional planners and designers. It resulted in a citywide plan that focused on urban design and land use solutions, which reduced risk from future flooding, prioritized redevelopment resources, and sustained key services for a smaller projected population. By far, the most controversial of these plans was the idea of shrinking the city’s footprint and replacing certain low-lying neighborhoods with green spaces.

The third planning was convened by City Council. The City Council’s New Orleans Neighborhood Rebuilding Plan (NONRP) process, which drew from a community development and organizing framework, developed neighborhood plans for all of the flooded areas. Essential to the plan’s recommendation was the assumption that 100-year flood protection would be provided expeditiously to the entire city, and future flood risks would be reduced to a more acceptable level.

By early summer, 2006, it became apparent that these and other previous planning efforts lacked either political support or the comprehensiveness of other parish recovery plans being submitted to the Louisiana Recovery Authority. Hence, LRA approached the Rockefeller Foundation, who agreed to partially fund planning in New Orleans on the conditions that the plan involves the cooperation of all key entities (mayor, city council, planning commission, LRA, and neighborhood representatives), that the plan covers the entire city, and that the process be inclusive and transparent.

3.2 Planning process of the Unified New Orleans Plan

The UNOP process intended to integrate all prior planning efforts into a single, citywide recovery plan, and worked on two spatial scales, the district and citywide levels. Both the citywide and district teams followed similar three-phase structures (Fig. 1): (1) to conduct a comprehensive recovery assessment; (2) to develop and select a recovery scenario preference; and (3) to construct recovery plans and prioritize a list of recovery projects. The UNOP projects were phased for implementation based upon a strategic recovery framework that worked to balance citizens’ futures as well as recovery investments, the pace of repopulation, and the risk of future flooding.

[Phase 1. Recovery Assessment]

During the first phase, teams examined the status of repairs and restoration one year after Katrina in order to depict the physical conditions of recovery across a series of sectors: population, economy, housing, flood protection, infrastructure and utilities, transportation, community services, and historic preservation. These findings were presented to Community Congress. This was not merely damage assessment, but was a comprehensive recovery assessment in order to indentify the challenges in New Orleans, which would be the basis for developing a recovery plan.

[Phase 2. Recovery Scenarios]

After the recovery assessment, Recovery Scenarios were used to develop the stage for three different recovery outcomes. The scenario development phase probed three recovery outcomes around the year 2017 (10 year timeframe), and differentiated these scenarios by the effects of
three major and uncertain variables: population return, future flood protection, and recovery funding. Based on each of the three scenarios (repair, rehabilitation, and revision) strategies were developed. Then impact and effectiveness of these strategies were explained to citizens to ascertain feedback and their preferences. This framework was based on the concept that priority and needs for recovery differ from uncertain variables, which the planners defined in the risk of recovery.

The recovery planning was developed with three risks consideration. This approach is completely different from building up the recovery projects what people want. Planners tried to explain the risk for citizens so that they could understand and accept the negative reality, but people discussed the recovery plan in terms of speed and an improved safety element for flood risk. Thus, this stage functioned as an opportunity for risk communication as well as to

Recovery Goals
1. Promote the integration of multi-level flood protection systems into rebuilding plans.
2. Renew the City’s roads, utilities, public transit, and infrastructure in a sustainable and strategic fashion.
3. Ensure an adequate supply of affordable, rental and public housing in an equitable manner.
4. Foster remedies to address blighted neighborhood conditions throughout the City.
5. Promote the strengthening and diversification of the economy by retaining key facilities, making strategic investments in workforce development and new infrastructure, and improving the overall quality of life.
6. Make significant, strategic investments in community facilities that will result in substantially enhanced community infrastructure and improved service delivery.
7. Preserve New Orleans’ culture, historic architecture, and overall aesthetic character to the maximum extent possible while facilitating new development.

Figure 1. Planning process and content of the Unified New Orleans Plan

Picture -1. Community Congress 2
Provided by Dr. Robert Olshansky (University of Illinois at Urbana-Champaign)
formulate a social consensus for flood risk, which the city has faced for a long time. One of the lead planners of UNOP stated the this Recovery Scenario worked as “translation tool, device for people to do realistic visioning New Orleans recovery future and it really became more of a mechanism for communicating the risk of – the reality that their neighbor may not come back, and the reality that it will be many years before the core of engineers builds the right kind of flood protection.”

[Phase 3. Strategic Recovery Framework and Project Priorities]
The framework considered two key risks, which could undermine the city’s future and any recovery investments- the pace of repopulation and the risk of future flooding. Moreover, it identified strategies and bundles of programs as well as policies designed to help mitigate these risks\footnote{11}, as depicted in Fig. 2. Citizens were asked to prioritize these strategies, programs, and projects by impact on the neighborhood and degree of interest.

4. Evaluating New Orleans post-disaster rebuilding planning using the four evaluation criteria
This chapter illustrates the mostly positive aspects of UNOP as a more ideal rebuilding model for our society.

4.1 Clear future vision for rebuilding based on the lessons from the disaster
In the UNOP, the vision is stated as, “All citizens, businesses and investors in our Great City have not only a right to return but also a right to return to a Safer, Stronger, Smarter City that enables a substantially higher quality of life, greater economic opportunity, and greater security against hurricanes than New Orleans had prior to Katrina.” What citizens emphasized in the Community Congress, a citywide planning meeting, was to improve flood control, affordable housing, infrastructure, health care, and school systems. The planners then used these priorities to formulate seven objectives (Fig. 2). The citywide plan contained visions, objectives, strategies, and programs/projects, and the strategic planning framework consisted of a citywide plan and thirteen districts plans. On the district planning level, planners, mainly members of Congress for New Urbanism (CNU), proposed New Urbanism as a new rebuilding model, which promotes walkable, neighborhood-based development as an alternative to sprawl. With regard to hazard mitigation within the city, UNOP outlined two priority programs to encourage elevation of structures and to cluster structures at higher elevations and at transportation nodes\footnote{9}. However, below the strategies level, UNOP remains to be a list of projects. This might be because UNOP was expected to show an effective program and the costs associated with concrete actions in order to leverage federal, state, and private investments after one year has passed.

One of the conditions to implement this local-based recovery plan was that the recovery projects were funded through Department of Housing and Urban Development (HUD) and Federal Emergency Management Agency (FEMA) as block grants, and not by project-based funding. This was the first large-scale use of a Community Development Block Grant (CDBG), which can flexibly fund a broader range of post-disaster projects. In addition, the Hazard Mitigation Grant Program (HMGP), which provides grants to state and local governments to implement long-term hazard mitigation measures after a major disaster has been declared, was used. This funding mechanism, which promotes mitigation activities in the recovery phase
with flexibility, and is not limited to restoration of the facilities, is a significantly important concept in the pursuit of an ideal recovery model for Japan.

4.2 Linking “individual recovery” with “urban and neighborhood level physical recovery

Hurricane Katrina destroyed not only housing, but also community facilities, including school buildings, retail stores, and hospitals. In order to bring citizens back to the city, the following needs to be provided: housing assistance, restoration of social service functions, such as retail, schools, and hospitals, restoration of security and status of neighborhoods, and a rebuilding direction. These necessities cannot be controlled by individuals (2). In the UNOP process, citizens’ desires were not a top-down regulation such as moratoriums for rebuilding, but incentives for self-reliant individual recovery. These incentives were to 1) reduce flood risk, 2) provide incentive for individual housing reconstruction to increase local safety, and 3) provide affordable housing as well as to ensure all citizens the fundamental rights to return to New Orleans. Based on the results of these requirements, the Neighborhood Stabilization Program was developed. This program was proposed to encourage residents of areas in the city where less than a quarter of the population has returned (in addition to areas that experienced the most acute flooding) to rebuild in clusters at higher elevations in order to help ensure vibrant neighborhoods and more efficient infrastructure costs in the context of a smaller overall population. The expected impact of this program is 1) to improve safety, 2) to continue prior communities, 3) to rebuild houses and to restructure communities through flood-resistant designs, and 4) to restore community service coordinated with individual housing reconstruction. However, critics have noted, “The plan’s programs were vague and they rely on voluntary actions rather than government mandates, critics have questioned the plan’s usefulness as a guide to the city’s future development”.

4.3 Citizen participation

As stated in Chapter 3, the UNOP provided the opportunity to promote citizen participation in recovery planning not only for people in New Orleans, but also for citizens temporarily residing outside of the city. This differs from the Kobe case as the UNOP offered not only neighborhood level vision statements, but also a citywide vision statement. In formulating a recovery scenario, the second stage of the UNOP process, citizens discussed their sense of values for rebuilding, which were timeliness and improved safety. America Speaks, a non-profit organization that engages citizens in public decisions impacting their lives, played significant role in organizing Community Congress (Picture 1). Community Congresses 2 and 3 were conducted as simulcast meetings in New Orleans, Houston, Dallas, and Atlanta, with many others linked via the internet at libraries and other meeting sites across the country. Participation in the Community Congresses in December and January reflected the demographic diversity of pre-Katrina New Orleans. Twenty-five percent of the 2,500 participants in the December meeting had an annual household income of less than $20,000 and 64 percent of the participants were African American. Williamson (2007) has indicated that the Second Community Congress enhanced the credibility of UNOP by gathering a representative mix of citizen voices and enabling conversation across different political momentum. Hence, the New Orleans recovery planning began from individual recovery by citizens’ involvement in setting the vision for the future. One of the members who designed the Community Congress says that “We really struggle that we had no leaders to give direction, so
we had to have the people give the vision.”

4.4 Planner's leading role

After Hurricane Katrina, the American Planning Association (APA) and private planners around the U.S. came together to assist New Orleans recovery planning. The fee for planners was philanthropically funded throughout the UNOP planning work. The reason that the local government could not take the lead in rebuilding planning was that the radical decline in tax revenue resulted in local government officials being laid off. The City Planning Commission of New Orleans, which is charged with land use and zoning ordinances, became dysfunctional due to decline in staff as it went from 20 members to less than 10 as well as a 40% reduction in funding.

Private planners worked as third parties, providing technical expertise, preparing several mitigation programs to reduce flood risk, and illustrating a recovery direction for New Orleans. The planners’ attitudes were more to work as facilitators or coordinators, similar to Kobe, rather than carrying out social responsibility and occupational ability. The planning framework and process were developed by disaster recovery professionals, while citizens took measures toward rebuilding New Orleans. The approach integrated the views and ideas of both the professionals and citizens. The former provided a citywide view for recovery and mitigation strategies based on scientific recovery assessment, while the latter was based on individuals’ social recovery. The collaboration between citizens and professionals led to a broad plan, which was comprehensive and ensured rationality.

5. Conclusion – what is the lesson from New Orleans in the early planning stage?

What could we, as Japan, learn from the recovery planning process in New Orleans after Hurricane Katrina? As described in Chapter 4, there is positive progress in recovery planning in New Orleans compared to Kobe in terms of pursuing safer, livable, and sustainable communities, neighborhood-based rebuilding, citizen participation, and planners’ leading roles. However, one of the failures is the lack of leadership by Mayor Nagin after withdrawing the Bring New Orleans Back Commission’s recovery plan. Mayor Nagin did not take initiative to ensure safety of the citizens who returned, but instead left risk acceptance as an individual decision. This choice clearly demonstrates that local government leadership is a crucial factor for promoting recovery planning. It can be said that this dysfunction of the local government led to the planners’ leading role in the UNOP recovery planning. Hence, the planners assisted a large number of citizens in setting the future vision and strategy for rebuilding, which included flood risk assessment and analyzing comprehensive challenges for New Orleans. The planners’ role in New Orleans was 1) to develop a citywide recovery vision and strategies with consideration not only to mitigation aspects, but also with presenting a new urban recovery model, 2) to promote risk communication for flood risk among citizens, and 3) to transform citizens’ ideas and input into a community design. This does not imply that the local government must take full responsibility for rebuilding planning. However, it does mean that recovery planning for the next disaster should be a partnership between the national government, local government, the citizens affected by the disaster, and a professionals’ network. One of the most promising programs is the “Neighborhood Stabilization Program”, which ensures continuity between local communities, and links individual recovery with restoration of local function, and thereby creates a safer community. Hence, this is a new
rebuilding model, and we, as Japan, need a new urban model for our depopulating and maturing society in the 21st century by breaking down our continuing history of using the Land Readjustment Project as a planning technique after a disaster and the Urban Development Project for our steadily growing economy.

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Notes

(1) The schedule and interviewee are indicated below.

【December, 2007】Associate Director of City Planning Commission, Dr. Marla Nelson (University of New Orleans); Mr. Steven Bingler and Ms. Bobbie Hill (Coordinator of UNOP, Concordia Architecture & Planning).

【June, 2008】Ms. Laurie Johnson (AICP, Consultant, San Francisco, CA, and disaster recovery and risk management consultant to UNOP). 【February, 2009】Ms. Dubravka Gilic (Manager of Strategic Planning, AICP, New Orleans City Office of Recovery Management); Dr. Patrick Haughey (University of New Orleans); Mr. Stephen Villavaso (president of the Louisiana chapter of APA).

(2) 56,865 households in New Orleans applied for Road Home Program, a housing rebuilding assistance program supported by the State of Louisiana, and of which 74% selected the option to rebuild on their previous land.

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