



# Failed Megacities and the Joint Force

By Matthew N. Metzler, Todd J. McCubbin, Heidi B. Fouty, Ken G. Morris, John J. Gutierrez, and John Lorenzen

In what might become one of the greatest international challenges of the 21<sup>st</sup> century, sociologists have documented a dramatic shift in population centers termed *megacities*.<sup>1</sup> These

densely populated urban areas are of such size and scale that they create new challenges requiring careful consideration by both civilian and military planners. The problems the joint force

could face when operating in a megacity would stretch the limits of U.S. military support to humanitarian assistance and disaster response (HA/DR) operations. Although joint doctrine addresses the subject of traditional urban terrain, it neglects to address the highly complex challenges associated with megacities. Given the potential crisis of a failed megacity, the probability for military support, and the risk associated with inadequate doctrine, the Department of Defense (DOD) must develop joint doctrine that adequately addresses the challenges posed by operations in a failed megacity.

There are several key points that underscore the need to develop joint force doctrine to address failed megacities. First, megacities should be categorized differently than other urban terrain due to the size and scale of those affected by either natural or man-made disasters.<sup>2</sup> Second, existing joint doctrine does not adequately

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Colonel Matthew N. Metzler, USAR, is Director of Army Reserve Affairs at Headquarters, U.S. Army Japan, Camp Zama. Major General Todd J. McCubbin, USAF, is the Mobilization Assistant to the Commander of Air Force Special Operations Command, Hurlburt Field, Florida. Colonel Heidi B. Fouty, USAR, is in the 416<sup>th</sup> Theater Engineer Command. Major Ken G. Morris, USAR, is in the U.S. Army Reserve—Civil Affairs, Human Resource Command. Major John J. Gutierrez, USMCR, is in the 4<sup>th</sup> Marine Division of the U.S. Marine Corps Reserve. Mr. John Lorenzen, USA, is an Instructor at the U.S. Army Command and General Staff College.



Marine Corps Warfighting Laboratory executed Dense Urban Operations limited operational experiment 2019 called Project Metropolis II, with Marines assigned to 3<sup>rd</sup> Battalion, 8<sup>th</sup> Marine Regiment; squad-size element from 1<sup>st</sup> Battalion, 6<sup>th</sup> Marine Regiment; and British Royal Marines assigned to 8 Troop Charlie Company, at Muscatatuck Urban Training Center, Indiana, August 20, 2019 (U.S. Marine Corps/Matt Lyman)

address the problem of conducting operations within an urban environment with a population of 10 million or more people.<sup>3</sup> Third, megacities will become more commonplace in developing nations and, due to the weight of economic and humanitarian needs, cause an increase in social destabilization.<sup>4</sup> Fourth, unstable nation-states will exploit potential migration crises from failed megacities in an effort to receive political favors and financial aid from the international community.<sup>5</sup> Fifth, violent extremist and criminal organizations will persist in and leverage ungoverned spaces in megacities to achieve their political and economic objectives.<sup>6</sup> Sixth, these organizations will leverage migration activity from megacities by embedding themselves within and recruiting from displaced civilian populations in order to breach established security measures.<sup>7</sup>

Finally, given these key points, U.S. leaders will likely need to quickly employ joint force capabilities to support humanitarian assistance operations for failed megacities to protect U.S. interests abroad.

### **Megacities: Definition and Problem**

General Mark Milley stated that the joint force is insufficiently prepared for operational activity in megacities.<sup>8</sup> His words of caution signal the need for military leaders to develop joint doctrine that adequately addresses operations within this highly complex terrain. *Megacities* are defined as areas of continuous urban development that contain over 10 million people.<sup>9</sup> These large and densely populated areas create new challenges that require careful consideration

for best practices by both civilian and military planners.

For the first time in recorded history, more than half of the world's population lives in an urban environment, with over 8 percent of mankind now living in one of the world's 37 megacities.<sup>10</sup> The 10 largest megacities are:

- Tokyo-Yokohama (38 million)
- Jakarta (32 million)
- Delhi (27 million)
- Manila (25 million)
- Seoul-Incheon (24 million)
- Shanghai (24 million)
- Mumbai (23 million)
- New York City (22 million)
- Beijing (21 million)
- Sao Paulo (21 million).<sup>11</sup>

In 1990, New York ranked as the second largest city in the world, with Los

Angeles ranking eighth. By 2018, New York dropped to the eighth largest, while Los Angeles slipped to seventeenth.<sup>12</sup> These statistics show that the developing world is outpacing Western population growth in dramatic fashion. For example, China now holds the largest number of megacities (four), with an additional eight cities on the cusp of megacity status.<sup>13</sup>

The reason megacities matter to the joint force is tied to the scope and scale of these large and potentially ungoverned spaces. The enormous challenges that military leaders faced during humanitarian assistance efforts following the 2010 earthquake that struck Port-au-Prince, Haiti, would pale by comparison if a similar earthquake struck a megacity. Port-au-Prince ranks as a relatively small urban population of just over 2.8 million (globally, Port-au-Prince ranks 176<sup>th</sup> in population).<sup>14</sup> A natural disaster disrupting a megacity, such as Lagos, Nigeria, with a population of 13.9 million people, or Seoul-Incheon, with 24 million inhabitants, would lead to exponentially more damage.<sup>15</sup> Military capabilities would be consumed relatively quickly under the sheer size and scale of any such response operation.

Given the gaps in current joint doctrine in addressing the significant challenges of a potential failed megacity such as Lagos, leaders should prioritize the development of relevant doctrine to the threat of failed megacities. The urbanization of populations across the globe and the resulting concentration of threats to millions of people in relatively confined areas pose a problem that military leaders have traditionally tried to avoid because of the associated risks. A natural or man-made disaster in a megacity such as Lagos would prove to be a complex disaster in an unknown or, more likely, hostile operational environment.

### Joint Urban Operations Doctrine and Megacities

In 2013, former Army Chief of Staff General Ray Odierno directed the Army's Training and Doctrine Command (TRADOC) to study the problem of megacities as part of a com-

prehensive review of urban operations.<sup>16</sup> Since then, General Milley and, before his retirement in July 2019, Marine Corps Commandant General Robert Neller openly stated their shared goal to improve urban operations doctrine in order to address the challenges of military operations in megacities.<sup>17</sup>

Joint urban operations (JUO) doctrine is largely silent on the subject of megacities and provides only a general overview of items to consider when conducting military operations, primarily combat operations, in an urban setting. Joint doctrine does discuss the challenges of what it describes as the "urban triad," which consists of three significant challenges for military operations in an urban environment. The triad includes man-made physical terrain—the buildings and layout of the urban area; population size and density—the magnitude of the population size, and the density/layout of the population; and infrastructure that the area/city depends on for basic operations—utilities that include sewer, power, and communications.<sup>18</sup> The triad is not only significant for planning urban operations, but it is also exponentially more critical in a megacity environment. Joint Publication (JP) 3-06, *Joint Urban Operations*, uses the term megacities to warn that criminal groups operating within this type of urban terrain have the potential to gain significantly more power over the population in a short amount of time than those who operate within rural settings.<sup>19</sup> The triad would serve as fundamental to criminal groups gaining control, but be difficult for joint forces to wrest from them.

In addition, JP 3-06 highlights a few critical points that could apply to both urban and megacity operations. For example, it discusses the critical nature of understanding the operational environment and the joint intelligence preparation of this environment.<sup>20</sup> It also emphasizes that urban operations should be a coordinated effort with all political, military, economic, social, infrastructure, and information elements and across all instruments of national power.<sup>21</sup> Understanding the operational environment and the collaboration of

intelligence are critical components, but doctrine should better address the significant differences between operating in megacities and operating in traditional urban centers.

In 2017, a RAND report addressed the concern of military operations in megacities by looking at five recent conflicts in urban environments.<sup>22</sup> The report stated, the "Army is not ready to fight in urban combat. Its doctrine, tactics, and training have not absorbed the lessons these case studies [the five recent conflicts] teach. In part, this is because urban combat is messy and destructive and seen as something to be avoided."<sup>23</sup> However, two common mitigation themes emerged from RAND's research into urban operational requirements that can aid in preparing for future urban conflict, and both may apply to urban HA/DR operations. First, maintaining a mobile protected firepower capability when conducting urban operations is a necessity for combat operations and force protection.<sup>24</sup> Second, forces need to be creative and adaptive and exploit intelligence to gain the desired operational effect.<sup>25</sup> This recent research suggests that current JUO doctrine and the Army's Field Manual 3-06, *Urban Operations*, are largely inadequate to address complex military operations involved in response to a failed megacity.<sup>26</sup>

In a 2015 article from *Parameters*, the authors point out that a megacity "can be best described as systems of systems, comparable to a living organism. They are dynamic environments that change not only block by block, but day to day."<sup>27</sup> The authors discuss five complex challenges presented by megacities that are either not adequately addressed or not addressed at all in current JUO doctrine. These five challenges include:

- regional and international interconnectedness and centers of gravity (not addressed)
- extended urban infrastructures supporting dense, diverse populations (partially addressed in joint doctrine)
- formal and informal sources of power (not addressed)



Octávio Frias de Oliveira bridge, commonly known as "Ponte Estaiada," spans Pinheiros River, February 3, 2015, São Paulo, Brazil (Courtesy Emilio García)

- congested and constraining terrain (partially addressed in joint doctrine)
- interconnected, embedded threats across super-surface, surface, sub-surface, and cyber/space (not addressed).<sup>28</sup>

These five areas highlight the fact that each megacity is unique and that the challenges faced will be multilayered issues for joint military and civilian leadership to address. A review of JP 3-06, recent research findings, and assessments from General Milley and General Neller all indicate that the joint force is not prepared, nor does current joint doctrine adequately address military combat or humanitarian operations in a megacity environment.

Joint publications do not address the challenges of a humanitarian and disaster relief response to the megacity environment. JP 3-29, *Foreign Humanitarian Assistance*, covers foreign HA/DR

and lists eight short references to the complexity of operating within urban terrain.<sup>29</sup> While JP 3-29 does cover the framework for DOD support to an HA/DR effort, and reviews the possible HA/DR missions, such as Federal disaster relief, dislocated civilians, security, and technical assistance, it does not directly address the complexities of providing these services in a megacity or urban environment. JP 3-29 also discusses “related operations,” such as humanitarian and civil assistance and security assistance (military training), foreign internal defense (JP 3-22), peace operations (JP 3-07), noncombatant evacuation operations (JP 3-68), civil-military operations (JP 3-57), and foreign consequence management (JP 3-41). A comprehensive review of these related operational areas and the corresponding joint publications reveal little guidance applicable to urban operations and none for megacity operations, which is a substantial gap in joint

doctrine for a highly probable future requirement.

Joint doctrine guidance for megacity operations is currently limited to the single joint publication that directly addresses JUO. While this might suffice for current smaller urban military combat operations, it does not provide sufficient guidance for megacity combat operations or megacity HA/DR (or its related HA/DR operations). While Army and Marine Corps leaders have identified a gap in the doctrine addressing combat operations in a megacity, the requirement equally exists for HA/DR and related operations for a megacity. The gap in doctrine should be addressed as soon as feasible across the spectrum of military response requirements.

To address the complexities of megacity humanitarian relief-type operations, JP 3-29 should be updated to include discussions on megacity operations. Currently, JP 3-29 chapter 3 discusses the major areas that military operations

in a HA/DR event will need to address, such as deployment, sustainment, command and control, intelligence, protection of the force, engineer operations, rules of engagement, legal considerations, liaison, communications synchronization, and public affairs.<sup>30</sup> Lessons learned from recent urban operations should be incorporated into 3-29.<sup>31</sup> Joint doctrine needs to expound on these topics to more adequately address the complexities of megacity operations. For example, the intelligence collection and fusion will be significantly different in a megacity environment based on scale and scope. Collection by space, air, and signal intelligence assets will be hampered in a large metropolitan area that contains large areas of ungoverned spaces. Leveraging social media, news media, and nongovernmental organization intelligence will be required in any megacity disaster relief operation, as well as sharing/synchronizing the intelligence with other civilian organizations and law enforcement agencies. In addition, HA/DR-related doctrine will need to incorporate megacity operational factors into HA/DR “related operations” mentioned above to better prepare the joint force for the complexities associated with megacity operations.

### **Joint Force Response to Haiti Earthquake**

The humanitarian assistance provided to Haiti after the 7.0 magnitude earthquake on January 12, 2010, provides a recent example of the employment of joint force capabilities, using current doctrine, to support a large urban population. The immediate and decisive response to the disaster directly saved lives and set the stage for follow-on operations. Several key aspects of this response can be cited as examples for the use of the joint force for these non-traditional missions, despite the issues encountered.

First, the military’s planning capability provided the framework for the integration and cooperation of the rest of the international community.<sup>32</sup> While the international community—both military and nongovernmental

organizations—stood ready to provide assistance in the aftermath of the earthquake, these agencies and partners depended on the planning capabilities of a joint task force (JTF) headquarters for international coordination structure. Second, the joint force employed effective methods for liaison activities among the numerous international organizations.<sup>33</sup> Recognizing that most assistance would not be provided by the joint force, the Operations Order 01-10 was published as an unclassified order so that partners would be able to share information.<sup>34</sup> In addition, the JTF used numerous liaisons to ensure that there was unity of effort throughout the operation. Finally, the integration of the JTF with the functionally degraded Haitian government showed the U.S. resolve to provide the gateway for humanitarian assistance without usurping Haitian independence.

Despite these positive aspects of the operation, several issues point to the lack of a comprehensive joint doctrine that addresses all of the challenges that may be encountered. According to JP 3-29, disasters could be slow onset, rapid onset, or complex.<sup>35</sup> In addition, the assistance may be required to be provided in one of three types of environments: permissive, uncertain, and hostile.<sup>36</sup> Although the damage and loss of life in Haiti was a massively tragic event, the disaster could arguably be classified as neither complex nor in a hostile environment. Yet the joint force still faced several obstacles in executing the operation. First, although the U.S. Agency for International Development was established as the lead agency, the command structure on the ground was unclear.<sup>37</sup> The agency was neither prepared nor equipped to manage the myriad U.S. and international organizations. Another problem encountered was the lack of clarity of priorities. The call for any and all types of assistance available, without the ability to accurately assess the ground situation, caused logistical and communication friction at airports, seaports, and along the limited land routes. Finally, the organization of the JTF headquarters into a functionally

aligned staff postured for theater security cooperation rather than crisis response made it difficult for the staff to plan continuous operations as other partners, organizations, and supplies were flooding into Haiti.<sup>38</sup>

### **Urban City Relief Operations Compared to a Megacity**

While the Haiti earthquake took an enormous toll in human lives and destruction of property and infrastructure, the failure of a megacity such as Lagos would pose infinitely more challenges to the joint force. Lagos would characterize all three challenges noted previously. First, the physical terrain would limit and impede freedom of movement for the joint force. The city of Lagos is filled with extensive infrastructure and is Africa’s major financial center. The buildings and layouts of this operational environment would further complicate any of the command and control issues that were faced in Haiti. In addition to the terrain obstacles, the population size and density of Lagos would make the operation environment extremely complex. While Haiti’s total population exceeded 10 million, this population was dispersed over more than 10,000 square miles. Lagos has a concentrated population of nearly 15 million confined to 452 square miles. Any threat posed by natural disaster, and the resulting chaos due to illness, criminal activity, and the collapse of any form of government, would be concentrated in an extremely densely populated area. Finally, the infrastructure of Lagos would further complicate any assistance operation. As seen in Haiti, the control of incoming organizations and supplies lacked any sort of prioritization or control. This problem was on an island with limited airport or seaport capability. In contrast, Lagos boasts some of Africa’s busiest airports, seaports, and highways. In addition, Lagos serves as a communication hub for Africa. Given the difficulty of controlling the limited infrastructure in Haiti, a disaster in Lagos would pose an infrastructure control and rebuilding issue of massive proportions.

Given the gaps in current joint doctrine in addressing the significant challenges of a potential failed megacity such as Lagos, leaders should prioritize the development of doctrine relevant to the threat of failed megacities. The urbanization of populations across the globe and the resulting concentration of threats to millions of people in relatively confined areas poses a problem that military leaders have traditionally tried to avoid because of the associated risks. A natural or man-made disaster in a megacity such as Lagos would prove to be a complex disaster in an unknown or, more likely, hostile operational environment.

Military leaders must seize the initiative to develop joint doctrine that adequately addresses the problem of military operations in a failed megacity environment. While some U.S. military leaders have held that humanitarian operations are a distraction from the true mission of the joint force, it is highly probable that political leaders within the United States would quickly turn to the military for an immediate HA/DR force for megacity challenges.<sup>39</sup> Although it is a reasonable position to want to avoid the complexities of humanitarian missions, historical events highlight the value of employing joint force assets to counter crisis events, such as the destabilizing effects of forced mass migration. As the RAND study and other works have pointed out, military operations will be required in a failed megacity and the failure of a megacity is highly likely in the not-too-distant future. DOD has learned valuable lessons from recent urban operations in Haiti, Mogadishu, and Fallujah.<sup>40</sup> Now is the time to develop DOD megacity doctrine *before* a disaster occurs. Updating DOD HA/DR-related doctrine will enable the future development of combatant command contingency plans to address likely security threats and challenges that will become the responsibility of future joint military leaders. JFQ

## Notes

<sup>1</sup> Kees Koonings and Dirk Kruijt, *Mega Cities: The Politics of Urban Exclusion and Violence in the Global South* (New York: Zed Books, 2009), 1, 8, 10.

<sup>2</sup> Kevin Felix and Frederick Wong, "The Case for Megacities," *Parameters* 45, no. 1 (Spring 2015), 20.

<sup>3</sup> *Ibid.*, 27.

<sup>4</sup> Joel Kotkin and Wendell Cox, "The World's Fastest-Growing Megacities," *Forbes*, April 8, 2013, available at <[www.forbes.com/sites/joelkotkin/2013/04/08/the-worlds-fastest-growing-megacities/#3af2c7057519](http://www.forbes.com/sites/joelkotkin/2013/04/08/the-worlds-fastest-growing-megacities/#3af2c7057519)>; *Demographia World Urban Areas*, 15<sup>th</sup> ed. (Beltsville, IL: Demographia, April 2019), available at <<http://demographia.com/db-worldua.pdf>>. China has four cities with over 8 million people and four others with over 7 million.

<sup>5</sup> Safak Timur and Rod Nordland, "Erdogan Threatens to Let Migrant Flood into Europe Resume," *New York Times*, November 25, 2016, available at <[www.nytimes.com/2016/11/25/world/europe/turkey-recep-tayyip-erdogan-migrants-european-union.html](http://www.nytimes.com/2016/11/25/world/europe/turkey-recep-tayyip-erdogan-migrants-european-union.html)>.

<sup>6</sup> Meghan Benton, *Spheres of Exploitation: Thwarting Actors Who Profit from Illegal Labor, Domestic Servitude, and Sex Work* (Washington, DC: Migration Policy Institute, January 2014).

<sup>7</sup> Brian Ross and Dragana Jovanovic, "Paris Bomber Sneaked in with Refugees, Officials Say," ABC News, with video, 2:08, November 15, 2015, available at <<http://abcnews.go.com/International/isis-refugee-journey-terror-paris/story?id=35220868>>.

<sup>8</sup> Todd South, "The Future Battlefield: Army, Marines Prepare for 'Massive Fight' in Megacities," *Military Times*, March 6, 2018, available at <[www.militarytimes.com/news/your-army/2018/03/06/the-future-battlefield-army-marines-prepare-for-massive-fight-in-megacities/](http://www.militarytimes.com/news/your-army/2018/03/06/the-future-battlefield-army-marines-prepare-for-massive-fight-in-megacities/)>; Gary Anderson, "Fighting in Megacities: The Army's Next Challenge," *Small Wars Journal*, April 5, 2017, available at <<https://smallwarsjournal.com/jrnl/art/fighting-in-megacities-the-armys-next-challenge>>.

<sup>9</sup> Kotkin and Cox, "The World's Fastest-Growing Megacities."

<sup>10</sup> See *Demographia World Urban Areas*. As of March 2018, 55.4 percent of the world's population lives in an urban environment, and 86 cities contain a population of over 5 million.

<sup>11</sup> *Ibid.*, 22.

<sup>12</sup> Kotkin and Cox, "The World's Fastest-Growing Megacities."

<sup>13</sup> *Ibid.* See also *Demographia World Urban Areas*.

<sup>14</sup> *Ibid.*, 25.

<sup>15</sup> *Ibid.*, 22.

<sup>16</sup> South, "The Future Battlefield."

<sup>17</sup> *Ibid.*

<sup>18</sup> *Ibid.*

<sup>19</sup> Joint Publication (JP) 3-6, *Joint Urban Operations* (Washington, DC: The Joint Staff, 2014), II-7.

<sup>20</sup> *Ibid.*

<sup>21</sup> *Ibid.*

<sup>22</sup> Gian Gentile et al., *Reimagining the Character of Urban Operations for the U.S. Army: How the Past Can Inform the Present and Future*, RR1602 (Santa Monica, CA: RAND, 2017), xiii, available at <[www.rand.org/pubs/research\\_reports/RR1602.html](http://www.rand.org/pubs/research_reports/RR1602.html)>.

<sup>23</sup> *Ibid.*, xiii.

<sup>24</sup> *Ibid.*, 174.

<sup>25</sup> *Ibid.*, xi.

<sup>26</sup> *Ibid.*, 160, 174–175.

<sup>27</sup> Felix and Wong, "The Case for Megacities," 45.

<sup>28</sup> *Ibid.*

<sup>29</sup> JP 3-29, *Foreign Humanitarian Assistance* (Washington, DC: The Joint Staff, 2013).

<sup>30</sup> *Ibid.*, chapter 5.

<sup>31</sup> Gentile et al., *Reimagining the Character of Urban Operations for the U.S. Army*, chapters 3, 4.

<sup>32</sup> David R. DiOrio, "Operation Unified Response—Haiti Earthquake 2010," Joint Forces Staff College, November 2010, 10, available at <[https://jpsc.ndu.edu/Portals/72/Documents/JC2IOS/Additional\\_Reading/4A\\_Haiti\\_HADR\\_Case\\_Study\\_revNov10.pdf](https://jpsc.ndu.edu/Portals/72/Documents/JC2IOS/Additional_Reading/4A_Haiti_HADR_Case_Study_revNov10.pdf)>.

<sup>33</sup> *Ibid.*, 5.

<sup>34</sup> Operation Order 01-10, *Haiti Earthquake Foreign Disaster Relief* (Miami: U.S. Southern Command, January 22, 2010).

<sup>35</sup> JP 3-29, III-3–III-4.

<sup>36</sup> *Ibid.*, III-4.

<sup>37</sup> DiOrio, *Operation Unified Response—Haiti Earthquake 2010*, 5.

<sup>38</sup> *Ibid.*, 6.

<sup>39</sup> JP 3-29.

<sup>40</sup> Gentile et al., *Reimagining the Character of Urban Operations for the U.S. Army*, chapters 3 and 4.