**NOTE**: Below are the narratives from the three peer reviewers (designated A-C based on the date of submittal to NIMSS, A being the first). Their narrative is in *italics*, our response is in **bold** font.

## Peer Reviewer A: Accept with Revision

*This is a valuable proposal that addresses an important need. The proposed structure is well-aligned with national conversations around urban sustainability. I recommend approving it following revision to address two concerns*.

*First, my primary concern about the proposed project is the way urban agriculture (UA) is represented within the broader focus areas. While UA is identified as a key topic, its treatment within the FEW nexus and alongside ecosystem services and urban soils positions it more as an environmental concern rather than recognizing the importance, research needs, challenges, and value of urban food production on its own. My experience with existing UA literature in this domain (the FEW nexus or ecosystem services) is that it ends up being fundamentally disconnected from the reason that many people are interested in it: the production of food to address issues with food access or food security or for the purposes of commercial/economic benefit*.

*While the proposal mentions food deserts, the proposal, in my reading of it, fails to discuss UA as a value in its own right (for public health benefits, food security, or supporting livelihoods), but it appears to only looks at it in terms of tradeoffs or ecosystems benefits. For example, it appears to suggest that urban agriculture's urban ecosystem services are a way to address food deserts. In my experience, the mere existence of an urban farm, even one that is very robust and successful, can utterly fail to address food access issues and can even exacerbate issues of food insecurity*.

*The proposal's focus on UA through this lens seems to be a result of the expertise of the project team and affiliated researchers, which appear to have expertise in environmental, ecosystems, built environment and similar domains, but lack expertise in community-based food systems, public health nutrition, horticulture, or other areas that focus more directly on the food production and distribution aspects of UA and its nutritional impact on communities. The absence of this perspective risks reinforcing a persistent gap I have seen in existing research and Extension in urban agriculture. Particularly in Extension, urban agriculture for food production purposes is systematically overlooked. There are urban gardens and programs for hobbyists, and there are programs for ecosystems services, but the real programming focused on food production is seen to be under the purview of agricultural Extension, which sees its focus and clientele as being more rural. In part, this is a result of the fact that Extension (rightly) flows from research, and research tends to fail*

*to look at urban food production specifically for food production's sake (i.e., what crops are grown? At what yields? What is most profitable or nutritious?).*

We appreciate the reviewer's thoughtful and constructive feedback. We agree that urban agriculture (UA) must be recognized not only for its environmental and ecosystem service contributions, but also as a food-producing sector with distinct research, public health, and economic importance. We acknowledge that the original proposal did not make this sufficiently explicit, and we have revised it to clarify this emphasis.

First, we want to state clearly that we view food production, food access, food security, public health, and livelihood generation as core dimensions of UA, not secondary outcomes of ecosystem service provision. We agree that positioning UA primarily within the FEW nexus and ecosystem services framing risks, reinforcing a pattern in which food production itself becomes underexamined. In response, we have strengthened language throughout the proposal to explicitly articulate UA as a production system that requires distinct research and technical support. Second, our revised language avoids implying that ecosystem services alone can resolve food inequities. Instead, we now explicitly emphasize the need for research that integrates production capacity, distribution systems, and economic viability.

Third, we agree that urban food production requires specialized research that acknowledges the distinct constraints of urban environments. We have strengthened the proposal to identify research pathways that directly address:

- Scaled nutrient management strategies
- Urban-adapted Integrated pest management (IPM)
- Appropriate technologies for rooftop, in-ground, controlled environment agriculture (CEA), and other urban typologies
- Economic feasibility and market integration for urban growers

We also explicitly acknowledge the Extension gap described by the reviewer. We agree that urban production-focused UA has often fallen between traditional agricultural Extension (which primarily serves rural producers) and urban-focused programs (which may emphasize gardening or ecosystem services). In the revised proposal, we clarify that a key goal is to strengthen research–Extension linkages specifically including our reference to alignment of datasets synthesized by the Long-term Argroecosystem Research (LTAR) (see Implementation: Objective 2).

Finally, while we retain the FEW nexus framing, we have revised the proposal to ensure that food production is not subsumed within environmental tradeoff discussions. Instead, we present production-oriented research as foundational, with environmental and ecosystem dimensions understood as interacting components rather than dominant lenses.

In summary, we have revised the proposal to:

1. Explicitly center food production, food security, and livelihoods as primary UA outcomes.
2. Clarify that ecosystem services are complementary, not substitutive, to production goals.
3. Identify concrete research priorities focused on urban-adapted agronomic practices, yields, profitability, and distribution.
4. Strengthen the commitment to production-focused Extension engagement in urban contexts.

We appreciate the reviewer's insight and believe these revisions strengthen the proposal by treating urban agriculture as a food-producing system with intrinsic value and distinct research needs.

*The other concern I have is with the budget. In the big picture, the budget seems quite large for the work that is being proposed, particularly given that the project does not involve conducting actual research, but instead synthesizing others' research and coordinating researchers. It seems to be quite a lot of FTE and individuals involved with not a whole lot of work or outputs.*

We appreciate the feedback on our budget and justification. Our approach towards coordinating, synthesizing, and accelerating urban research uses a multi-faceted approach that funds research efforts in a variety of ways.

Part of our approach through this NRSP is to support synthesis-focused research. This line of research generates new findings, and does so by leveraging the vast amount of existing data across the nation to help build a stronger conceptual understanding of how urban ecosystem science scales across space and time. We have done a more thorough job explaining this research area in our proposal, clarifying that it is not a glorified literature review- rather it will be an opportunity for dozens of researchers to bring together similar, yet previously unaggregated datasets, to explore urban ecosystem questions at scales that

have to date been ignored. We believe this work is incredibly important, and will help fill a fundamental gap in our understanding of urban ecosystem services.

In addition to supporting synthesis-focused research, we also encourage foundational and applied research. Our seed grant competitions and travel grants ($360,000 total) will directly fund researchers interested in advancing science related to our IRNs. Based on your feedback, we've reflected on what a useful seed grant allowance could be. Based on similar competitions at our existing universities, we have modified our seed grant program to support ~2 seed grants per year at $30,000, reducing the number of grants, but doubling the funding available each year.

In addition to directly funding research, part of our budget goes towards supporting virtual proposal development workshops (run by personnel at WSU and MSU). While not providing dollars to researchers directly, we leverage personnel time and experience to bring hundreds of people together each year to learn more about relevant work within each IRN, build competitive research teams, and apply for external funding (beyond our NRSP, which explicitly is about supporting research, but not directly funding research) which we think is a valuable use of resources.

*In particular, I would like more clarity and explanation of what two graduate fellows would be doing to warrant over $400,000 on the project. The second budget concern I have is with the size of the seed funding grants that are proposed. In my experience, it is difficult to do anything for less than $75,000. As I read the budget, they intend to allocate that amount of funding in total for 6 pilot projects, rather than $50,00-$75,000 each. As I look at the budget, reallocating the annual $77,000 designated for graduate fellows toward seed funding could generate more substantial engagement from the research community and support more robust research in this area*.

With a particular emphasis placed on synthesis-focused research, we recognize that curating data and framing appropriate research questions takes leadership. We have envisioned this as an excellent opportunity to both bring established researchers together to explore their data in new ways, while meaningfully engaging early career scientists who are interested in interdisciplinary urban research. To this end, we are providing a 9-month Research Assistantship for 12 graduate students between Years 1-4. Each year, three SWG Fellows will be recruited from across our IRN networks, and will each help lead one SWG effort. These fellows will take the lead on synthesizing where existing research and data could be used to answer questions at broader spatial or temporal scales, and would be supported through regular engagement with a Planning Committee of approximately 4-8 faculty who have related expertise to the chosen SWG theme. With the Fellow leading, the team would work to identify relevant knowledge gaps and answer low-hanging fruit

**research questions. We anticipate these efforts would not only lead to at least two peer-reviewed publications per SWG that produce new science, but would also identify target areas where the NRSP can support additional efforts to address urban challenges. Fellows will be expected to use these experiences to also support their own research, and will benefit from the networking and interdisciplinary training that accompanies these roles. In total, we are devoting ~$80,000 per year to support these three Fellows, which equates to a little over 15% of our anticipated budget each year. We believe this investment will both support new research directly via the Fellow's engagement and indirectly by helping us target our focused seed grant competition each year.**

*I am supportive of this proposal and recommend approval pending revision. With clearer attention to the role of food production in urban agriculture and a more strategic use of project funds (or a more detailed justification of the current budget), the proposal will be even better positioned to advance this important work.*

## Peer Reviewer B: Accept

*This is a well-developed proposal that addresses current needs to integrate applied research and extension to meet the needs of urban population centers. Most of the U.S. population is in urban, suburban or peri urban areas however the applied research and extension infrastructure is not as well developed as it is for rural population areas for production of adequate healthy foods.*

*The PI's have addressed major national needs however there is a lack of involvement from urban centers in the southeast and southwest U.S. Urban centers in these regions have significant growing population in hot-humid or hot-arid climates which pose unique climate resilience and food production needs in the urban landscape.*

**We agree with the importance of the southeast and southwest regions. While we do not members from these regions as part of the current proposal development team, we have engaged them and letters of intentions to engage with the project if funded from the following (see Appendix 2 for the letter of intentions – see the bookmarks to easily navigate through the Appendix):**

- **Texas A&M's Institute for Advancing Health Through Agriculture**
- **Texas A&M's Human Behavior Laboratory**
- **University of Georgia's Center for Urban Agriculture**
- **University of Arizona: Extension, Center for Urban Smart Agriculture, and Institute for Resilience**
- **Dr. Dawn Gouge, Urban IPM specialist at Univ of Arizona**

- Dr. Most Tahera Naznin, Assistant Professor of Urban and Indoor Agriculture at University of Nevada Reno

We have also added references to these letters in the Relevance to Stakeholders: Identification of Stakeholders and Related Needs and Stakeholder Involvement in Project Development and Activities sections of the proposal.

*A significant portion of the project is related to developing leadership and the data hub. How will this translate into an incentive program that brings research scientists and extension specialists together to create and extend knowledge for urban centers?*

We appreciate the opportunity to clarify how our NRSP supports research advancement. Our combined approach of targeted programs that support synthesis-focused research, direct funding of conceptual and applied research, and team building and targeted proposal development brings a diverse range of opportunities to NRSP participants-whether they are research scientists or extension specialists. For more information, please see our responses to Reviewer A and C.

*More thought as to how funding will be solicited and secured from stakeholders, and federal or state governments for long-term sustainability.*

The overall business plan for institutionalizing the core activities and goals of this NRSP is the integration with the National Urban Research and Extension Center (NUREC) in that NUREC is currently working with the Washington State University Office of Research to evolve NUREC into a Research and Extension Consortium. The consortium will provide the structure by which to engage external partners and funders (e.g. foundations, industry, philanthropic organizations, and sponsored projects). The core objectives and supporting activities of the NRSP of building integrated research networks, synthesizing knowledge, accelerating new research, and communicating results will be integrated into NUREC as it focuses on its mission of bridging the gap between research and community. This long-term business model will accompany NUREC's evolution from a state-membership model to a broader, nation-wide consortium.

Additionally, our response to Reviewer A's question about budget better articulates how the SWG, SWG Fellows, travel grants, and pilot project funding work together to create and support teams to more effectively secure external funding.

## Peer Review C: Accept

*Proposal is clear and overall technical merits are sound. Priority issues are illustrated.*

*The main element I find unclear is regarding membership. Membership into NUREC appears to be exclusive so it's hard to understand how membership will be utilized to achieve the project goals.*

We appreciate the opportunity to clarify how this NRSP and NUREC fit into a collaborative short and long-term approach to advancing urban research. Currently, NUREC is an institutionally-based membership organization that started with 6 members in 2015. It now has 17 members, adding 3 new members in 2026. As discussed in the response to Reviewer B's question, NUREC is evolving into a broader-based consortium that will increase impacts. As a membership-based organization there is some need to return value to its members; however, NUREC members also see a value in advancing the entire LGU system's ability to engage better in urban communities.

Therefore, NUREC's structure allows for targeted synergistic work that supports the nationally available NRSP activities – basically NUREC can serve as an external funder who has geographic priority areas and is able to directly fund research as well as Extension and research-Extension activities, which the NRSP is not supposed to do. Additionally, while NUREC, as an external funding organization may prioritize work in certain geographic areas, it will also support research and extension activities that are national or regional in scale. In this way it not only supports the NRSP project goals, but it also acts as a synergistic organization to leverage the activities, outputs, and outcomes from the NRSP towards larger outcomes that support the tri-part mission of the LGU system to generate, disseminate, and apply knowledge.

*The proposal states the methodology to expand IRN membership to include at least 30 researchers in Year 2. How was this determined as the target number? Perhaps the PIs are being very conservative but that number seems very low. Or perhaps a small number of members is desired.*

Thank you for pointing this number out. We had intended to indicate that researchers from at least 30 INSTITUTIONS would be engaged by year 2. As to the number of individuals engaged by year 2, we would anticipate at least 300 individuals would be engaged across the connected activities of the NRSP based on our previous experience leading elements similar to what we propose here. Our NRSP is designed to engage researchers in multiple ways based on different, yet connected, goals.

For example, our Research Synthesis and Acceleration Activities seek to provide opportunities across topical interests, time commitments, and career pathways. Participants can experience anything from listening to a webinar on how to integrate team science principles into their own research strategy (MSU workshops tend to draw ~30

people per event), to presenting to the NRSP community on an IRN-related theme (NUREC presentations have drawn upwards of 100 people per event), to leading a Synthesis Working Group (similar activities support by WSU engage ~30 people per SWG, so estimating 90 people per year across three SWG events), to meeting new researchers and crafting new proposal ideas during our Proposal Development Workshops (WSU and MSU have co-led similar workshops drawing 200 participants in the past).

We also anticipate that additional IRN related activities, opportunities, and events will draw additional engagement at the national scale.

Based on our previous experience, we are confident that the defined breadth and depth of our NRSP provide numerous ways for researchers to engage and be supported in developing national networks to further high-quality research to address current and emerging issues across our nation's urban landscape.