



5.5 Rightsizing Policy

Background

The purpose of this policy is to clarify Iowa DOT's definition of rightsizing and to document policy statements in several topical areas to help further formalize and institutionalize rightsizing practices. The context of this discussion is primarily the state-owned highway network, and the rightsizing philosophy applies to Iowa DOT projects. While the highway network may typically be thought of in terms of vehicular traffic, it is also an important conduit for other modes of transportation such as public transit users, bicyclists, and pedestrians, and most rightsizing concepts can be applied across transportation modes.

While this is the first adoption of a rightsizing definition and policy statements as part of the long-range plan, rightsizing is not new. Rightsizing aligns with other planning frameworks such as context sensitive solutions and performance-based practical design, and many of the concepts discussed in this policy are already being implemented.

At its essence, rightsizing is about trying to make the best choices for the overall transportation system when developing individual projects.

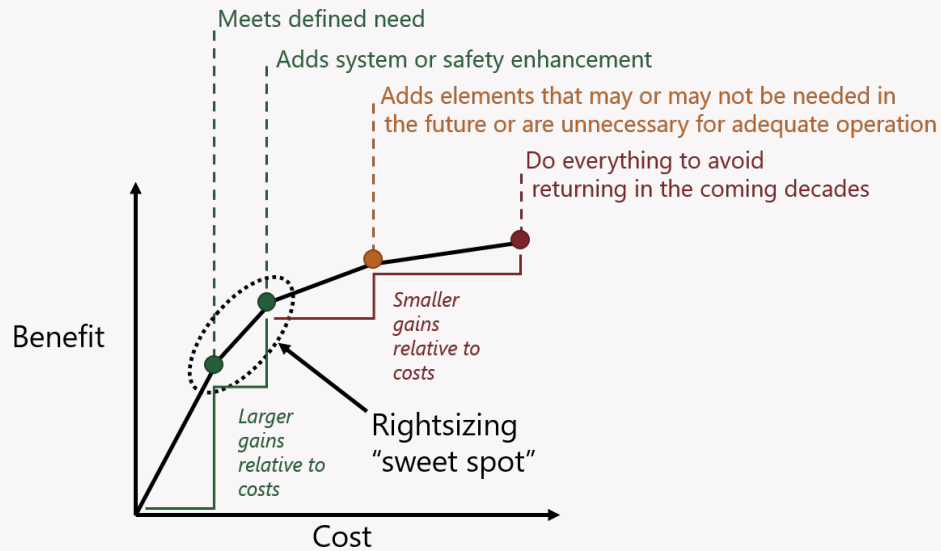
- Rightsizing is about ensuring **individual projects** are appropriately scoped. When a project is being developed, there is always something else that can be added to it, but it is neither practical nor feasible to add elements indefinitely.
- At the **broader program level**, rightsizing ties in with efforts to prioritize among projects in order to select the best projects to carry forward. Given the realities of constrained budgets, competing priorities, and varying preferred outcomes among user groups, there are always more improvements to the transportation system that are needed or desired. Defining transportation needs appropriately is the first step in rightsizing and can help ensure that well-scoped projects rise to the top.

These concepts are especially important since budgets are limited and we know we do not have enough funding to make all needed improvements to the system. Making a choice to complete a project in one location means not completing a project in another location, so every incremental cost increase means we have less capacity to address needs elsewhere. Also, every addition to the system's infrastructure now is a commitment to increased future maintenance needs. However, rightsizing does not always mean choosing a lower-cost option or eliminating project elements – as discussed in this policy, some rightsizing decisions involve considering context or needs that may broaden a project's scope or cost.

The aim with rightsizing is to find the right balance of addressing an individual project's needs versus the benefit gained to that location and the system overall. This is illustrated in Figure 5.30. The preferred location for a rightsized project on the benefit/cost curve is when the project is meeting the location's defined needs and, if applicable, adding system or safety enhancements that are appropriate for the location. However, if project elements are added beyond this without appropriate justification, the increase in benefit relative to the increase in cost degrades substantially.

It is understandable why some projects start creeping towards the top of the curve. For example, there may be interest in adding any elements that may be needed in the coming decades while work is being done, rather than potentially needing to come back in the relatively near future for additional work. However, given the limited budget for the transportation system, it is not prudent to take this approach for unnecessary enhancements or when future needs are relatively uncertain. Once the defined need for the project is met, designers must weigh the decreasing return on investment that additional project elements would have relative to the benefit that would be gained.

Figure 5.30: Rightsizing “sweet spot”



Source: Iowa DOT

Rightsizing does not replace the use of engineering judgment; input from the public, user groups, or communities; required guidelines, parameters, or laws; or other important elements of the project selection and development process. The policies are meant to provide guidance on achieving a rightsized transportation system for Iowa, which is defined in the next section.

Definition

The Iowa DOT defines rightsizing as the following:

Rightsizing means seeking an appropriate level and type of investment that avoids overinvesting or underinvesting, overbuilding or underbuilding, and overserving or underserving the market based on user and system needs.

The department's role in rightsizing should be viewed as leveraging existing assets and limited resources to maximize the returns for users of the multimodal transportation system, with operating, maintaining, and constructing this system as a means to this end.

Rightsizing is incremental and applies at various points during planning, programming, and project delivery activities, as well as during ongoing operation and maintenance of the transportation system. While the policy statements provide guidance, to be successful the rightsizing concepts need to be integrated through implementable actions across these stages. Decisions made at each level of development should build upon each other to result in the best solutions to support the quality and financial sustainability of the transportation system. It is anticipated that a rightsizing workplan will be developed to outline activities and responsibilities to implement rightsizing. Many of the possible implementation activities discussed for the policy statements throughout this section would likely be addressed through the workplan.

Policy Statements

To support rightsizing implementation, a number of policy statements have been developed to help guide investment decisions for Iowa DOT projects. Some of these topics are already considered in the planning and project development process, but many of these statements will require further work, such as research, analysis, incorporating new elements or checks into the project development process, and modifications to guidance documents and manuals.

The ten rightsizing topic areas are:

- Project needs
- Comprehensive needs
- Stewardship priority
- Stratification of the system
- Equity
- Resiliency
- Congestion or operational issues
- Emerging technologies
- Speculative development
- New or revised interchange access



Project Needs

All improvements shall address a measured transportation need based on current or forecasted conditions. Improvements addressing a current need should be prioritized over improvements addressing a forecasted need.

What does this mean?

- Every project requires a clearly defined transportation need or needs. While wholly unneeded projects may not be occurring, the specific need for a project is not always clearly defined. Projects can also suffer from scope creep, where additional enhancements or elements are added that are not directly related to defined needs. These choices can accumulate until many small, seemingly good decisions have resulted in losing sight of the big picture and the specific need(s) the project is addressing.
- Project needs can be adjusted or redefined, but this should be merited based the planning or design process. The benefits and costs of addressing needs may vary depending on project staging and scheduling, particularly in locations with significant needs resulting in large-scale projects.
- Current, known needs are to be prioritized over future, potential needs. This applies both when determining the elements to include in a specific project and when prioritizing among projects. Addressing a future need, or something that is not currently an issue but is expected to become one, involves estimation and judgment related to the likelihood for the future need. Implementing a project to address a future need that is relatively uncertain should be done strategically and carefully.
- The defined need referenced in this statement is not meant to be equivalent to the purpose and need required by NEPA, though they would likely be very similar.

How might this be implemented?

- Clear definition of need in all project concept statements.
- If new project elements are identified after projects are conceived, reevaluation of those elements relative to the identified needs.
- If elements are incorporated to address future needs, those potential needs are clearly quantified through data-driven evaluation.
- Continue improving analysis tools and benefit/cost evaluation tools and integrating them into the planning, programming, and project development process.
- Consider how the staging or scheduling of projects may impact project benefits/costs.



Comprehensive Needs

Broader system, corridor, and modal needs shall be considered as individual projects are developed. To identify such needs, project sponsors should consult the state transportation plan, relevant system and modal plans, and planning studies. Decisions should emphasize maximum benefit to the system, rather than maximum benefit to the project location.

What does this mean?

- While an individual project may have a clear extent, it should not be developed in isolation. Individual road segments and bridges are parts of larger highway corridors, multimodal routes, regions, and the overall transportation network. Project development needs to involve consideration of what is planned in the broader corridor and nearby areas; needs and policies that have been documented in statewide system and modal plans, studies, and policies; and systemic and location-specific safety improvements.
- This is an example of rightsizing that may result in a project that is broader in scope than the originally defined need. For example, application of the Complete Streets policy may help identify the need and justification for wider paved shoulders than the original project design included. In another example, consideration of Super-2 strategies on a targeted Super-2 corridor may result in the inclusion of additional passing and/or turn lanes as part of the project's design.

How might this be implemented?

- Continued development of system, modal, and systemic safety plans, identification of strategies, and adoption of policies to help meet needs.
- Coordination with stakeholders, including local jurisdictions, public transit agencies and modal partners, and other interested parties.
- Continued use of Planning and Environmental Linkages (PEL) feasibility studies to define the vision, goals, and strategies for study areas and analyze engineering and environmental conditions.
- Integration of strategies and policies into the project development process, such as the Complete Streets policy, Super-2 targeted corridors, and SLRTP-identified needs in concept statements.
- Development of tools to evaluate project benefits and costs, as well as benefits and costs of policies or system-level strategies that may not fit well into a traditional benefit/cost analysis.

Stewardship Priority

Program-level investment strategies and all improvements shall prioritize maintaining a state of good repair. Decisions should apply appropriate asset management techniques, including life cycle planning, and consider relevant state of good repair targets to maintain transportation infrastructure in sufficient condition.

What does this mean?

- This statement is important documentation of our asset management approach for investments. Asset management is about applying the right treatment at the right time to achieve the ideal balance of asset condition and whole-life costs. When planning projects, it can be easy to focus only on up-front costs and choose the option that is cheaper now, even if it is more expensive in the long run. Similarly, it can also be tempting to put off a costlier treatment or rehabilitation in favor for a cheaper one, to save money now at the longer-term detriment of the system. Making investment decisions through an asset management lens helps ensure these tradeoffs are evaluated as part of the project development process.
- The definition of a state of good repair may vary by mode, asset, or other classifications, and may be quantified by a condition target. In general, a state of good repair means that assets are functioning as designed at an acceptable level of performance within their useful service lives and are sustained through regular maintenance, rehabilitation, and replacement programs.

How might this be implemented?

- Specific policies may be developed that outline state of good repair targets. For example, the Transportation Asset Management Plan (TAMP) identifies system-level state of good repair targets for pavement condition on the Interstate system and non-Interstate National Highway System (NHS), and for bridge condition on the NHS. Another rightsizing policy suggests further stratifying the system for purposes such as these.
- Integrate evaluation of whole life costs into project planning and development.
- Apply appropriate asset management techniques to projects.
- Continue to research and refine asset management systems, practices, and treatments.



Stratification of the System

The department shall evaluate and consider implementing an approach to stratify the Primary Highway System for the purpose of defining corresponding state of good repair targets and informing investment decisions. Such stratification should consider existing designations, including the National Highway System and Commercial and Industrial Network, functional classification, current and forecasted use, and network redundancy.

What does this mean?

- The state-owned highway system is diverse and complex. It ranges from urban multilane Interstates with over 130,000 vehicles per day to rural two-lane roads with less than 1,000 vehicles per day. Different roadways have different contexts, users, and needs, such as freight routes, commuter corridors, community access, and so on. These purposes may need to be managed differently and to a different level. For example, it may be appropriate to target a higher level of service or condition level on a busy freight route than on a less utilized highway that primarily provides access for local traffic. Stratification could inform condition targets as well as the types of treatments that would be considered for particular roadways.
- While state of good repair targets are identified at the Interstate and non-Interstate primary highway system levels for pavements and bridges, this does not provide adequate delineation given the wide range of characteristics seen on non-Interstate highways. The proposed type of stratification would provide further context to asset management planning and investment decisions.

How might this be implemented?

- Review existing and potential stratification classifications.
- Consider adoption of unique state of good repair targets based on a preferred system stratification.
- Consider adoption of policies or strategies related to the range of treatment types that will be considered based on stratification.

Equity

The department shall evaluate the ways transportation policies and investments impact equity and consider strategies to support an equitable transportation system. Such consideration should include reviewing sociodemographic and socioeconomic disparities and barriers that inhibit underserved communities from fully accessing and utilizing the transportation system.

What does this mean?

- Different people and populations have different levels of need when it comes to fully accessing and using the transportation system. In particular, additional consideration may be required to ensure underserved individuals are able to achieve an equitable level of access to affordable and reliable transportation options. This applies to transportation infrastructure and services that already exist along with those that may develop or become common in the future as technology advances.
- This is an example of rightsizing that could result in adding project elements in order to address community-specific needs and/or to ensure the impacts of transportation projects are distributed fairly.
- Examples of underserved groups include, but are not limited to, individuals who are low income, minority, limited English proficient, elderly, children, or persons with disabilities.
- In some cases, legacy highway construction was built in a manner disruptive to communities, particularly low-income communities and communities of color. Enhanced engagement with local communities should be conducted to ensure these types of impacts do not occur due to transportation projects and, where appropriate, to remove or retrofit infrastructure barriers that disrupt community connectivity.

How might this be implemented?

- Continue to apply environmental justice, Title VI, and nondiscrimination policies in all investment decisions to achieve an equitable distribution of benefits and burdens, including ensuring that there are not disproportionately high and adverse human health or environmental effects on underserved populations.
- Ensure that driver license and identification issuance reflects nondiscrimination and Civil Rights policies and enables all populations to have the same opportunity for mobility.
- Analysis of the transportation needs of underserved populations.
- Consideration of non-drivers in investment decisions.
- Adoption of strategies to ensure equity.
- Development of tools to evaluate projects from an equity perspective, which may not fit well into a traditional benefit/cost analysis.
- Enhanced public involvement efforts.
- Coordination with stakeholders, including local jurisdictions, public transit agencies and modal partners, underserved community representatives, and other interested parties.



Resiliency

The department shall assess, plan for, and invest in the resiliency of the multimodal transportation system to mitigate against natural and human-made disruptions. Such activities should consider proactive and reactive measures that are proportional to existing and potential threats.

What does this mean?

- Resiliency is the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and quickly recover from disruptions. Extreme weather and natural disasters have happened with increasing frequency and can lead to devastating consequences for the transportation system, not to mention people's homes, businesses, and lives.
- Flooding is likely Iowa's greatest ongoing threat to resiliency, but climate change and a wide range of natural disasters and human-made disruptions threaten the usability and condition of the highway network. Planning and project development should consider the risk of disruptions to the system and whether proactive steps can be taken to construct more resilient transportation assets.
- Resiliency also means being prepared to react when disruptions or disasters occur, including making continued improvements to activities such as traffic incident management protocols, diversion routes, and preparedness and recovery planning. This is necessary not just for large-scale disaster planning, but also for addressing short-term disruptions to the transportation system or IT infrastructure. These disruptions can be unplanned, such as crashes, a severe storm, or cyberattack, or planned, such as work zones or closures for construction or traffic management for special events.

How might this be implemented?

- Conduct resiliency analyses that consider the criticality of the transportation system and its vulnerability to climate change and various natural disasters and human disruptions.
- Enhance disaster mitigation and response planning and coordination.
- Improve department cybersecurity to protect IT assets by addressing vulnerabilities, ensuring critical systems are protected, and incorporating redundancy where needed.
- Consider innovative project design to make assets more resilient to disasters.
- Routinely conduct risk management activities at the planning and project levels.
- Evaluate policies related to transportation system disruptions, such as how traffic is managed during construction projects.

Congestion or Operational Issues

Improvements proposed to address current or forecasted congestion shall consider increased use of technology and operational improvements. Decisions should emphasize maximizing the capacity of the existing multimodal transportation network and managing demand for the system, rather than investing in capacity expansion.

What does this mean?

- Iowa has a mature and reliable transportation system. There is little congestion or delay on the system as a whole; when these issues are experienced, they are typically confined to specific locations and to peak hours. While there may be instances where building additional capacity is the necessary solution to a congestion issue, this is becoming the exception rather than the rule. Strategies that better utilize existing infrastructure are preferable to adding lanes to the highway system, which results in increased right of way needs, construction costs, and long-term maintenance commitments.
- There is an increasing necessity to consider other options for improving operations, including technological solutions, innovative design, managing peak-hour demand, and use of public transit, carpool/vanpool, or other modes besides single occupant vehicles. Before any capacity expansion project proceeds, alternatives to capacity expansion should be considered first and eliminated as being less prudent options.

How might this be implemented?

- Continue to implement Integrated Corridor Management (ICM) studies and solutions in areas with congestion or operational issues.
- Continue advancement of Transportation Systems Management and Operations (TSMO) planning and inclusion of feasible TSMO solutions in planning studies and project development.
- For capacity expansion projects, demonstrate that capacity expansion is the only feasible or most practicable option before proceeding.
- Enhance transportation and land use planning coordination with metropolitan and regional planning agencies and communities.
- Conduct comprehensive planning for deployment of operations-focused strategies, including initial implementation costs as well as ongoing operations and maintenance needs.



Emerging Technologies

All improvements shall consider the impact of underestimating or overestimating the influence of emerging technologies on the intended benefit of the improvement over its useful life. In considering such impacts, the department should evaluate probable rates of technological deployment/adoption, projected impacts of technologies on the performance of the multimodal transportation system, and the sensitivity of return-on-investment to various deployment/adoption scenarios.

What does this mean?

- Change is inevitable. Some of the clearest examples include the increasing use of electric vehicles, growing micromobility options, and advancements in automated transportation and personal delivery devices. Although broader adoption of these types of changes may be on the horizon, we cannot say with certainty how close that horizon is, how widespread adoption of these technologies will be, or whether these changes will be equitably available to all users of the transportation system.
- While we are working to support the advanced driver assistance systems of today and the automated driving systems of tomorrow, projects that include decisions that assume advancements in technology should include thorough evaluation of the likelihood of that technological advancement occurring in the near-term future and the degree to which the project’s success or need is tied to that. This should be considered strategically and carefully when:
 - Considering whether to include project elements that have limited current benefits due to the assumption that they will be needed for technological advancements in the future.
 - Considering whether to exclude project elements that have current benefits due to the assumption that they will not be needed in the future.
- Making choices that are tied to a single future scenario with an uncertain likelihood.
- Making choices that exacerbate inequities or mobility limitations among various groups.
- Advances in mobile technology will lead to more opportunities for documents and credentials to be held and transacted directly by the individual user. This may include mobile driver license or identification applications and fully electronic vehicle titles. There will be challenges to ensure that such documents are accurate in real-time, secure, legally accepted, and made accessible to all users.

How might this be implemented?

- Incorporate pause points into the project development and programming processes to consider the evolving impacts of disruptive technologies.
- Monitor technological advancements, likely deployment scenarios, and impacts to various groups.
- Conduct risk analysis relative to the tradeoffs of including or not including project elements due to technological change.
- Strategize how and when to participate in pilot deployments or to act as a lead adopter among states for key advancements in technology.

Speculative Development

Improvements proposed primarily in support of speculative development shall not be considered unless a transportation need is also being addressed. This shall not apply to improvements proposed to address transportation needs associated with planned development.

What does this mean?

- The department's top priority is stewardship of the transportation system and ensuring that the system Iowa needs is maintained in a condition that enables safe and efficient passenger and freight movements. There is not adequate funding to complete all needed transportation improvements, so we cannot afford projects that do not have a demonstrated transportation need.
- Speculative development means there is no defined or imminent development planned.
- To help address economic development, Iowa DOT administers the Revitalizing Iowa's Sound Economy (RISE) grant program, to which this policy does not apply. That program helps support both immediate needs and speculative development for business and industrial growth.

How might this be implemented?

- Ensuring that all projects have a defined transportation need.
- Ensuring that associated planned development, which may factor into project decisions, meets conditions that would indicate more certain or imminent progress.



New or Revised Interchange Access

The department shall provide for a consistent approach in determining financial participation between the Iowa DOT and local governments for new or revised interchange access. For new or revised service level interchanges proposed primarily in support of local development, or in cases where local development traffic would degrade the performance of a systems interchange, the department should seek a proportional cost sharing agreement with the local government(s).

What does this mean?

- Similar to speculative development, building interchanges without a transportation need is not necessarily in the Iowa DOT's interest from a system perspective. Being more consistent in how we approach situations where new or revised interchange access is proposed would be beneficial.
- While some degree of flexibility is always needed at a project level, clear parameters should be established at the department level to help guide conversations related to cost sharing.

How might this be implemented?

- Develop guidelines for how interchange access projects are typically funded in various scenarios.