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NATIONAL TRANSPORTATION SAFETY BOARD

More Detail on the Selection Process Could Increase the Understanding of the Most Wanted List of Transportation Safety Improvements

This report was revised on March 19, 2020 to include the National Transportation Safety Board's letter commenting on the draft report as appendix III, on page 32.
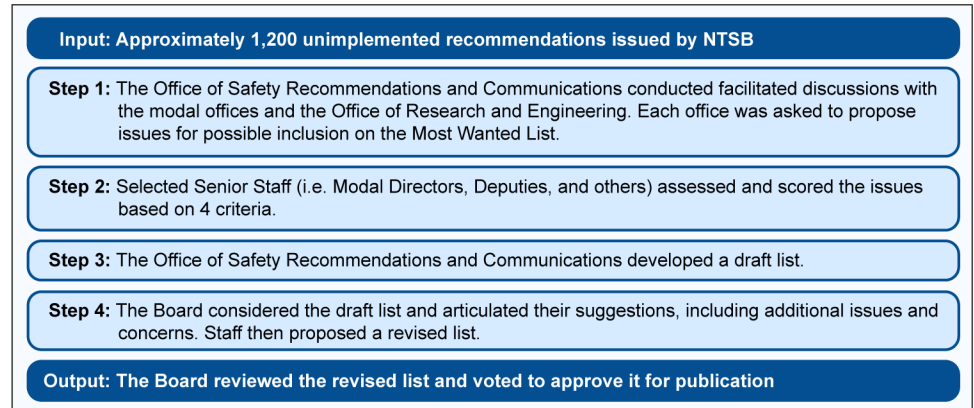
GAO-20-395

NATIONAL TRANSPORTATION SAFETY BOARD

More Detail Could Increase the Understanding of Selections for the Most Wanted List of Transportation Safety Improvements

Why GAO Did This Study

NTSB investigates accidents across all modes of transportation and issues recommendations intended to prevent similar accidents. In 2019, NTSB published its latest Most Wanted List of Transportation Safety Improvements. It identified 10 transportation safety issues with 268 underlying safety recommendations.

The National Transportation Safety Board Reauthorization Act of 2018 included a provision for GAO to examine NTSB's methodology for evaluating and selecting recommendations for inclusion in the Most Wanted List. This report discusses (1) NTSB's methodology for developing its Most Wanted List and (2) how NTSB addressed statutory requirements and how its methodology aligned with components for systematic decision-making, among other objectives. GAO reviewed NTSB documentation for its process of selecting issues for the Most Wanted List. GAO also interviewed NTSB officials to understand the rationale behind the selection methodology and how the process was applied. GAO compared the methodology to essential components for systematic decision-making and the statutory requirement that NTSB publish a publicly available methodology report that describes NTSB's consideration of key elements.

What GAO Recommends

GAO recommends NTSB improve how it documents and communicates decisions for its Most Wanted List. NTSB agreed with both recommendations.

View GAO-20-395. For more information, contact Dan Bertoni at (202) 512-2834 or BertoniD@gao.gov.

What GAO Found

The National Transportation Safety Board (NTSB) developed a multiphase approach to select issues for its 2019–2020 Most Wanted List of Transportation Safety Improvements (see figure). NTSB designed the selection process to encourage collaboration and to consider the expertise of NTSB's four modal offices (Aviation Safety, Highway Safety, Marine Safety, and Railroad, Pipeline, and Hazardous Materials) and its Office of Research and Engineering. Like past lists, each issue must be supported by one or more open safety recommendations. The process also allowed NTSB's board members and others discretion in suggesting changes to the issues proposed for inclusion on the Most Wanted List. NTSB uses the list to raise awareness of its recommendations and to advocate their adoption since the NTSB cannot require implementation of its recommendations.

National Transportation Safety Board's Selection Process for Its 2019–2020 Most Wanted List of Transportation Safety Improvements

Input: Approximately 1,200 unimplemented recommendations issued by NTSB

Step 1: The Office of Safety Recommendations and Communications conducted facilitated discussions with the modal offices and the Office of Research and Engineering. Each office was asked to propose issues for possible inclusion on the Most Wanted List.

Step 2: Selected Senior Staff (i.e. Modal Directors, Deputies, and others) assessed and scored the issues based on 4 criteria.

Step 3: The Office of Safety Recommendations and Communications developed a draft list.

Step 4: The Board considered the draft list and articulated their suggestions, including additional issues and concerns. Staff then proposed a revised list.

Output: The Board reviewed the revised list and voted to approve it for publication

Source: GAO analysis of Most Wanted List of Transportation Safety Improvements documentation. | GAO-20-395

NTSB published a methodology report, in response to the requirements in the National Transportation Safety Board Reauthorization Act of 2018, that detailed the methodology to evaluate and select issues for the list. GAO found that the design of NTSB's methodology met the essential components for designing a sytematic deicision-making framework. When implementing that methodology, however, NTSB did not fully document how staff, when evaluating the issues, considered its own established criteria nor fully communicated the rationale for why its selected issues were "ripe for action" now—a key component of the list. While GAO was able to determine the rationale for NTSB's evaluation and selection decisions, NTSB's guidance does not require NTSB to fully document or communicate its decision, and NTSB does not do so. Greater transparency in how issues are evaluated and selected could enhance users' understanding of the list and help ensure the list continues to rally the support and resources needed to tackle difficult and long-standing transportation safety challenges.

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March 18, 2020

The Honorable Roger Wicker
Chairman
The Honorable Maria Cantwell
Ranking Member
Committee on Commerce, Science, and Transportation
United States Senate

The Honorable Peter A. DeFazio
Chairman
The Honorable Sam Graves
Ranking Member
Committee on Transportation and Infrastructure
House of Representatives

In 2018, transportation-related accidents in the United States resulted in approximately 39,000 fatalities. The National Transportation Safety Board (NTSB), an independent federal agency, plays a vital role in advancing transportation safety by investigating and determining the probable cause of accidents, issuing safety recommendations, and advocating for identified safety improvements. New transportation technologies and the implementation of many NTSB safety recommendations have made transportation safer than ever. At any given time, however, approximately 1,200 NTSB safety recommendations remain unimplemented (i.e., open recommendations).These recommendations, if acted upon, could potentially prevent accidents and save lives. NTSB does not have the authority to require implementation of its recommendations so it created the Most Wanted List of Transportation Safety Improvements (the List). The List is intended to help raise awareness of NTSB's open recommendations and encourage action to further improve safety across all modes of transportation. Since the List was created in 1990, it has been transformed with respect to the number and the specificity of issues included. This evolution raises questions about how the list is developed. The most recent list, released in February 2019, identified 10 issue areas and 268 associated safety recommendations.

The National Transportation Safety Board Reauthorization Act of 2018 required NTSB to publicly publish its methodology used to select recommendations for inclusion on the List and describe how it accounted

for certain elements, such as the risk to safety.[1] Additionally, the National Transportation Safety Board Reauthorization Act included a provision for GAO to evaluate NTSB's Most Wanted List methodology. This report (1) describes NTSB's methodology for evaluating and selecting issues and recommendations, (2) describes how NTSB's methodology report addressed statutory requirements and assesses the extent to which it aligned with the essential components for designing a systematic decision-making framework and (3) describes the efforts NTSB has taken to advocate for the issues and recommendations on the List and the views of selected stakeholders on the List's usefulness.

To describe NTSB's methodology, we reviewed NTSB documentation pertaining to the process for evaluating and selecting issues and recommendations for the List, including the publically published methodology report and internal guidance. We also analyzed documentation that detailed NTSB's decision-making methodology during the various phases of the process. In addition, we interviewed officials, including the National Transportation Safety Board's members and key staff from NTSB's modal offices and the Office of Research and Engineering, to understand the rationale behind the methodology's design and how it was applied.

To describe how NTSB addressed the statutory requirements of the National Transportation Safety Board Reauthorization Act, we reviewed its methodology report and compared it to the statutory elements required in the Act. We also interviewed NTSB officials who developed the report. While there is no one common or widely accepted approach to making risk-informed, systematic decisions, we have previously developed a framework for making such decisions. According to our previous work, decision-making fundamentally involves selecting among different options given reasonably available information and various preferences. We previously synthesized key concepts from relevant literature and input from experts to develop a framework that reflects those fundamental concepts.[2] Specifically, the frameworks consists of four broad phases: (1) designing the decision-making process, (2) analyzing how well each option performs with respect to the established objectives, (3) deciding which option is preferred, and (4) implementing and evaluating the preferred option. Each phase also consists of several essential

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[1] Pub. L. No. 115-254, § 1106 (2018).

[2] GAO, *Environmental Liabilities: DOE Would Benefit from Incorporating Risk-Informed Decision-Making into Its Cleanup Policy*, GAO-19-339 (Washington, D.C.: Sept. 18, 2019).

components. We also determined that this framework or specific elements of this framework might be applicable to other decision-making processes. To assess NTSB's methodology, we compared its Board Order that established the program and other internal guidance to the essential components for designing the decision-making process. We also compared the implementation of the methodology design to two other selected essential components for analyzing the different options and deciding on a preferred option based on their applicability to NTSB's methodology and the purpose of the program.

To describe the efforts NTSB has taken to advocate for the List issues and recommendations, we reviewed NTSB documentation and guidance on promoting the List among the stakeholders and the general public. We also spoke to NTSB's communication staff responsible for developing and implementing advocacy programs about planned ways and strategies to achieve results advocated through the List. Further, to obtain the users' perspectives on how useful users find the List and why, we selected and spoke with a non-generalizable sample of 20 organizations about the ways in which they generally use the List and its usefulness to them. We selected stakeholders to interview by identifying three groups that interact with NTSB and potentially use the List: (1) recipients of recommendations, (2) advocacy groups, and (3) industry associations. We selected 10 recommendations recipients, including two industry groups, five federal agencies, and three state government organizations that had at least two safety recommendations identified in the most recent list. We then selected a total of 10 advocacy groups and industry associations that we identified as having worked with NTSB in the past. We made selections to ensure that each mode of transportation (aviation, highway, railroad, marine and pipeline) was represented by at least one stakeholder. Because this was not a random or statistically representative sample, the views of these stakeholders are not generalizable to all users of the List but our selection provides a cross-section of stakeholders. See appendix I for a list of our selected organizations.

We conducted this performance audit from March 2019 to March 2020 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The Independent Safety Board Act of 1974 established NTSB and tasked it with the responsibility for proposing corrective steps to make transportation as safe as possible and to advocate for those steps to ensure that they reduce the likelihood of transportation accident recurrence.[3] NTSB carries out these responsibilities by investigating major transportation accidents, determining probable cause, and issuing safety recommendations that propose solutions. After any domestic civil aviation accident or a major transportation accident involving a railroad, marine vessel, highway, or pipeline, a team of investigators is dispatched usually within hours of notification of the accident. Upon analyzing information obtained from the scene of the accident as well as from other sources, NTSB analysts prepare an accident investigation report that—once finalized—typically include safety recommendations.

NTSB's board is composed of five members nominated by the President and confirmed by the Senate to serve 5-year terms.[4] The Board must approve and vote on all NTSB accident reports, studies, and recommendations before they can be published. The board is supported by five investigative-focused offices that employ investigators and other technical staff. Four of the five offices investigate accidents by transportation mode (also called "modal offices"), specifically: (1) the Office of Aviation Safety, (2) Office of Highway Safety, (3) the Office of Marine Safety, and (4) The Office of Railroad, Pipeline, and Hazardous Materials. The fifth office, the Office of Research and Engineering, provides technical expertise, among other responsibilities, across all modes of transportation. As Table 1 indicates, the offices have varying degrees of flexibility pertaining to the launch of an investigation. For example, the Office of Aviation Safety has limited discretion in deciding which accidents to investigate and the Office of Highway Safety has the greatest amount of discretion in deciding whether to investigate an accident. The agency also consists of a number of other offices, including the Office of Safety Recommendations and Communications (SRC). The Office of Safety Recommendations and Communications is responsible for coordinating and communicating with outside individuals and organizations regarding NTSB's on-going activities. The Office of Safety Recommendations and Communications' responsibilities include developing and implementing advocacy programs and campaigns (such

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[3] Pub. L. No. 93-633, § 303 (1975).

[4] The Chairman is NTSB's Chief Executive and Administrative Officer.

as the List) to build understanding, awareness and support for the agency's safety recommendations.

Table 1: Investigative Priorities and Key Policies by Office within the National Transportation Safety Board (NTSB)

NTSB Office	Number of recommendations issued (2014-2018)	Number of investigations launched[a] (2014-2018)	Key investigative priorities and policies
Office of Aviation Safety	283	992	All civil and certain public aircraft accidents in the United States and participating in foreign accident investigations that involve U.S. carriers, U.S.-manufactured or U.S.-designed equipment, or U.S.-registered aircraft.
Office of Highway Safety	197	77	Selected accidents, including railroad grade crossing accidents at the Board's discretion
Office of Marine Safety	121	161[b]	Selected major marine casualties, accidents involving public vessels with any non-public vessel, accidents related to significant Coast Guard functions, and international accidents where the United States is the state of registry or has interested onboard (passengers) who are injured.
Office of Railroad, Pipeline, and Hazardous Materials	245	57	Railroad accidents involving a fatality, substantial property damage, or a passenger train. Pipeline accidents involving a fatality, substantial property damage, or significant environmental damage. Any release of hazardous materials in any mode that involves a fatality, substantial property damage, or significant environmental damage.
Office of Research and Engineering	92	0	Provides technical support to NTSB accident investigations in all modes of transportation, including analyzing recording devices and materials, in addition to conducting safety studies and other responsibilities.

Source: GAO analysis of National Transportation Safety Board data | GAO-20-395

[a]Number of Investigations launched includes major and regional accident investigations. According to a NTSB official, these generally include fatal accidents or non-fatal accidents that NTSB is required to investigate.

[b]This number may include Office of Marine Safety accident briefs which, according to a NTSB official, are shorter reports without safety recommendations

Unlike regulatory transportation agencies, such as the Federal Aviation Administration, NTSB does not have the authority to promulgate regulations to promote safety, but it can make safety recommendations, including to other agencies that have such regulatory authority. NTSB's recommendations are a suggested course of action proposed by staff and adopted by the Board to correct an identified transportation safety deficiency. Generally, recommendations address a specific issue uncovered during an investigation or study. The scope of recommendations and who may receive them can vary considerably, from recommendations encouraging state legislation, to ones suggesting regulatory changes, to others proposing minor procedural changes within

an organization. After a safety recommendation is adopted by the Board, it is actively monitored until it is closed. NTSB generally closes recommendations once it determines the recommendation's recipient has addressed the issue as suggested or by taking an alternative action that meets the intent of the recommendation. As of 2018, NTSB has issued about 15,000 safety recommendations to more than 2,400 recipients. According to NTSB's *2018 Annual Report to Congress*, 82 percent of its recommendations have been closed.[5]

NTSB seeks to influence recommendation recipients to take action through its advocacy efforts because it cannot require the implementation of its recommendations. In order to increase the general awareness of its recommendations, NTSB established the Most Wanted List program in 1990. The stated purpose of the program is to increase industry, congressional and public awareness of the issues identified in the agency's accident investigations and to advocate for the adoption of open recommendations. The List is intended to reflect the current concerns of NTSB and include issues it believes are "ripe for action" and merit increased attention. A board order (an internal document that provides policy guidance and establishes procedures) specifies that issues are to be selected from NTSB's safety recommendations and emerging areas and establishes the procedures for the identification, evaluation, and selection of open safety recommendations.[6] NTSB's report on its methodology for the Most Wanted List also stated that each issue on the List must be supported by one or more open safety recommendations. For example, the board chose to include the need to "eliminate distractions" in transportation on the Most Wanted List and identified 12 associated open recommendations that could help mitigate distractions. These recommendations range from revising train dispatcher rules to banning nonemergency use of portable electronic devices for all drivers. See Figure 1 for a list of the issues selected for the 2019–2020 List and

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[5] According to NTSB internal guidance final action on a recommendation should generally be completed in a 3-to-5 year timeframe. Non-urgent recommendations that require state legislative, regulatory, or similar action should be completed in a 6 to 10 year period. If the Board, based upon the staff's recommendation, determines that a recommendation could have been completed within the specified timeframe, the recommendation will be classified as "Closed—Unacceptable Action".

[6] NTSB defines an emerging issue as not necessarily a new issue, but one that may require immediate attention that cannot await the traditional Most Wanted List cycle because of a safety concern, and that if not addressed, poses imminent danger or threatens the safety of the travelling public. Emerging issues must meet the same criteria and review process established for the inclusion on the Most Wanted List, but in a more expedited timeframe.

the number and transportation mode associated with the supporting recommendations.

Figure 1: 2019–2020 Most Wanted List of Transportation Safety Improvements' Issue Areas and the Number of Associated Recommendations by Transportation Mode
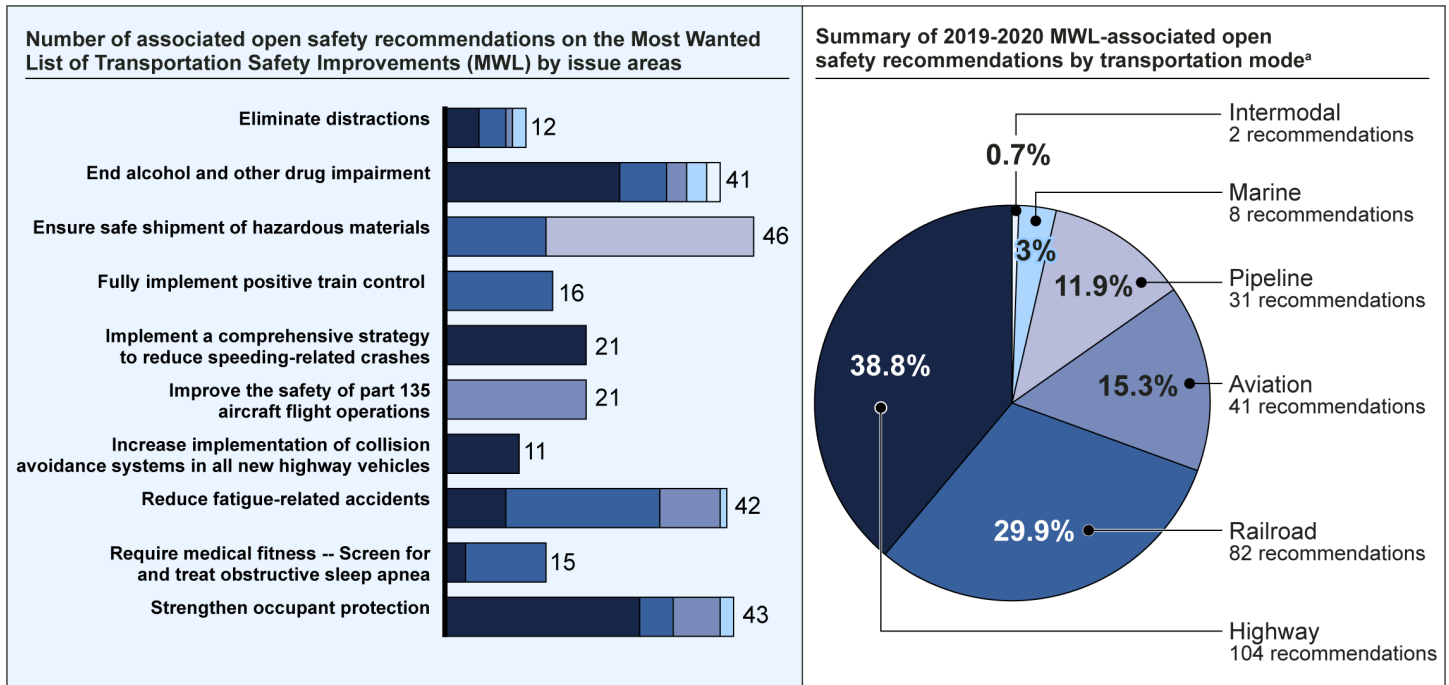
Source: GAO analysis of NTSB's Most Wanted List of Transportation Safety Improvements. | GAO-20-395

[a]Numbers do not add to 100 due to rounding.

NTSB Used a Multiphase Process to Select Issues for its 2019–2020 Most Wanted List

Since 2016, NTSB's has used the same general framework for developing its Most Wanted List—the Board order that established the program and defined the fundamental parameters in which open recommendations are to be evaluated and selected. The order outlined that staff were to:

- collect suggestions from NTSB modal directors and others for proposed issues,

- establish an internal review panel to review those proposals, and

- develop a draft list for the Board to vote on.[7]

The Board order also outlined the goal of the methodology to select 5-to-10 transportation safety issues based on magnitude of risk, potential safety benefits, timeliness, and probability of advocacy efforts to bring about change.
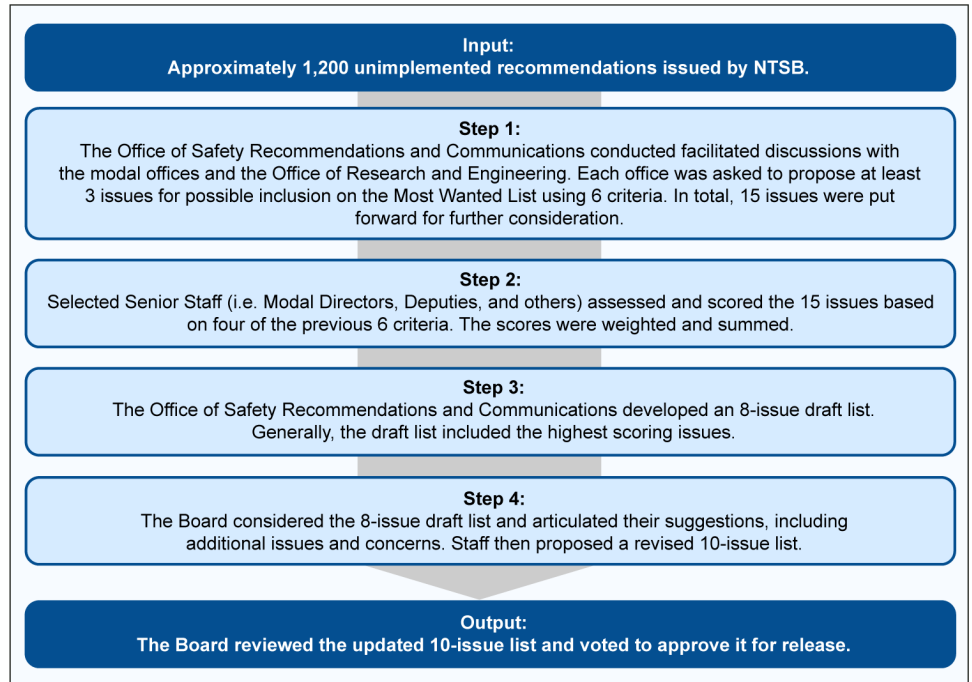
Further, according to NTSB officials, the inclusion of an issue on the prior Most Wanted List does not affect its inclusion on the current list. Recommendations that may potentially lead to the issue areas (as listed in figure 1) are evaluated anew during each evaluation and selection cycle. The Board and the staff assess each recommendation independently of its past inclusions, resulting in a new Most Wanted List every 2 years. Nonetheless, an issue can be included on the List for several years. For example, the issue of eliminating distractions has been on each list since 2013.

To select potential issues to be included on the 2019–2020 List, NTSB used a multi-step process that, according to agency officials, encouraged collaboration and considered the expertise of NTSB's investigatory offices more than previous iterations. Like past lists, each Most Wanted List issue area must be supported by one or more open safety recommendations. The process also continued to allow the Board and others discretion in suggesting changes to the issues proposed for inclusion on the List. As shown in figure 2 and discussed below, the process to identify and select issues consisted of four steps.

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[7] The Board order also authorized the Office of Safety Recommendations and Communications to administer the methodology.

Figure 2: The National Safety Transportation Board's (NTSB) Process to Identify and Select Issues for its 2019–2020 Most Wanted List of Transportation Safety Improvements

Input: Approximately 1,200 unimplemented recommendations issued by NTSB.
Step 1: The Office of Safety Recommendations and Communications conducted facilitated discussions with the modal offices and the Office of Research and Engineering. Each office was asked to propose at least 3 issues for possible inclusion on the Most Wanted List using 6 criteria. In total, 15 issues were put forward for further consideration.
Step 2: Selected Senior Staff (i.e. Modal Directors, Deputies, and others) assessed and scored the 15 issues based on four of the previous 6 criteria. The scores were weighted and summed.
Step 3: The Office of Safety Recommendations and Communications developed an 8-issue draft list. Generally, the draft list included the highest scoring issues.
Step 4: The Board considered the 8-issue draft list and articulated their suggestions, including additional issues and concerns. Staff then proposed a revised 10-issue list.
Output: The Board reviewed the updated 10-issue list and voted to approve it for release.

Source: GAO analysis of Most Wanted List of Transportation Safety Improvements documentation. | GAO-20-395

Modal offices and the Office of Research and Engineering proposed issues. To begin identifying potential issues for inclusion on the 2019 list, the Office of Safety Recommendations and Communications conducted a series of facilitated in-person discussions with leadership and select staff from each of its four modal offices and the Office of Research and Engineering. According to NTSB officials, these facilitated discussions were designed to ensure greater communication and collaboration across the agency and lead to a better understanding of why each office was proposing its issues. Each office was asked to assess NTSB's open recommendations and other agency products and identify three issues for possible inclusion on the List.[8] To facilitate the discussions, NTSB developed six criteria for modal offices to consider (see table 2). According to NTSB officials, other than requiring an open recommendation, the other criteria were not intended to be prioritized and

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[8] Agency officials told us they conducted this step through email correspondence for past lists.

the proposed issues did not have to meet a minimum number of the criteria.

Table 2: The Criteria That Modal Offices and the Office of Research Engineering Were to Consider when Proposing Issues for the 2019–2020 Most Wanted List of Transportation Safety Improvements

| Criteria	Description
Data	Relevant NTSB or industry data pertaining to fatalities, injuries, and known benefits
Trends	Accident or safety issue trends identified across multiple accidents
Recommendations	Open recommendation related to the issue
Potential Risk	Potential for accidents, loss of life, and injury if the status quo continues
External Support	The level of support from external organizations for recommendation adoption
Likelihood of Success	The likelihood of successfully closing open recommendations in a 2-year period

Source: GAO analysis of NTSB documentation | GAO-20-395

Based on our discussions with officials from the four modal officials and the Office of Research and Engineering, we found that each office proposed issues rooted in an open recommendation and exercised their discretion when considering the other five criteria. As a result, the extent to which the other five criteria factored into their decision-making varied. Officials told us they generally applied the criteria they believed to be most relevant or available to their office. For example, the availability of, and thus, the emphasis on, accident data varied across offices since some offices had better access to data than others. Some offices also took into account other considerations when deciding what issues to propose, such as how recent the recommendations were or their cross modal relevance. Officials from one of these offices told us that they considered these other factors because they generally signified an issue's ability to garner more media or public attention, and thus, may be more likely to influence recommendation recipients into action, a key intent of the list. For a more detailed discussion for how each office took into account the six criteria, see appendix II.

After the facilitated discussions, similar items were combined. For example, the Office of Highway Safety and the Office of Research and Engineering both suggested alcohol and drug related concerns that were combined into a more general "alcohol and drug impairment" issue. The

four modal offices, the Office of Research and Engineering and the Office of Safety Recommendations and Communications then agreed collectively to forward15 issues for further consideration (see fig. 3).

Figure 3: Issues Proposed by the Modal Offices and the Office of Research and Engineering and Forwarded to the Next Step of the Selection Process
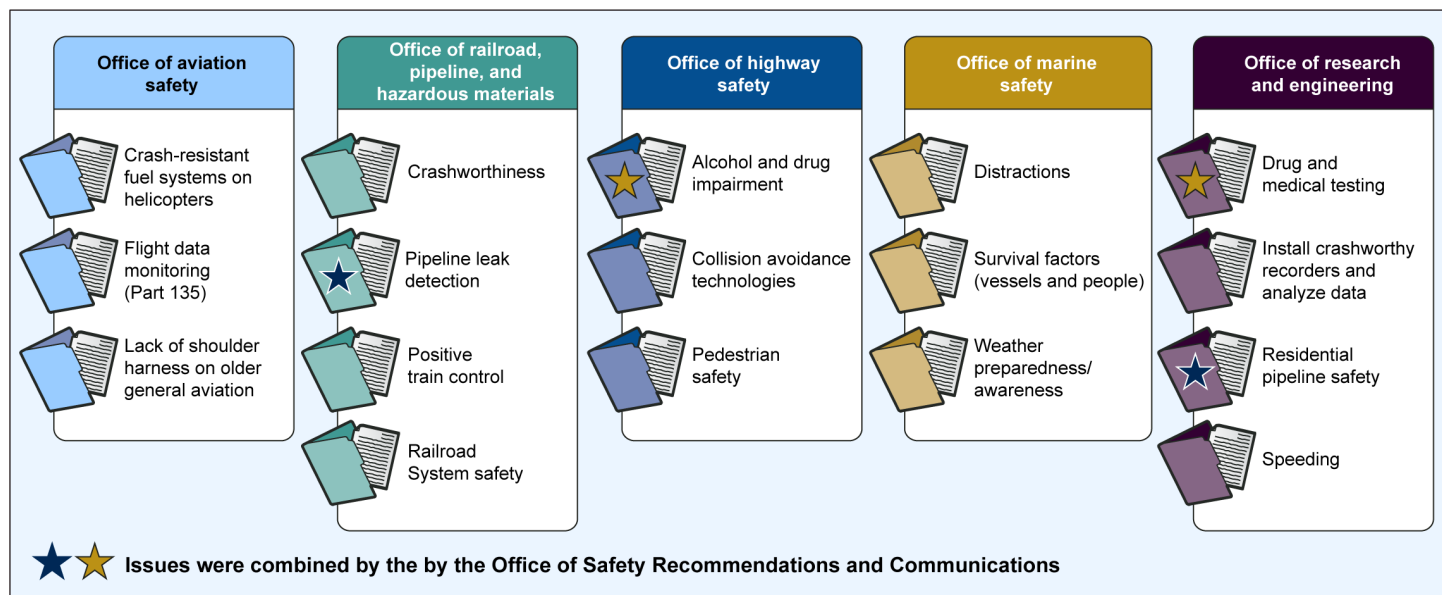
Source: GAO analysis of Most Wanted List of Transportation Safety Improvements documentation. | GAO-20-395

Selected senior staff review and rank proposed safety issues. Directors and Deputy Directors from the modal offices and other select senior staff then met to assess and rank the 15 proposed issues. The Office of Safety Recommendations and Communications' (SRC) officials asked the staff to consider four of the six criteria in their assessments— (1) number of open recommendations, (2) external support for an issue, (3) potential risk, and (4) likelihood of success.[9] SRC also developed a scoring rubric to compare the proposed issues. Each criterion was then given a numerical weight reflecting its importance and significance.[10] The

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[9] According to agency officials, SRC focused in this phase only on the four criteria it thought required the most internal expertise. Neither the data nor the trends criteria were used as part of this rank ordering process.

[10] Potential risk was assigned a weight of 4; external support and likelihood of success were assigned a weight of 2, and the number of open safety recommendations associated with the issue was assigned a weight of 1.

modal directors identified the potential risk as the most important criteria (and was given the largest weight) since, according to agency officials, the agency's goal is to reduce transportation fatalities. Then, for each issue, staff assigned a numerical score of 1 to 5 based on the extent to which they believed the issue aligned with each of the four criteria. For example, if an issue had a high level of external support, a higher score was assigned to that criterion. After a score was assigned for each of the four criteria in each issue, a total score was computed based on multiplying the score by the weights for each criterion. See Table 3 for an example.

Table 3: Example of Scoring from Review and Ranking of Proposed Issues by Select Senior National Transportation Safety Board Staff

Issue: crash resistant fuel systems on helicopters

Criteria	Weight	Assigned Score	Total
Potential Risk	4	2	8
Likelihood of Success	2	2	4
External Support	2	3	6
Number of Recommendations	1	4	4
Total			**22**

Source: GAO analysis of NTSB documentation | GAO-20-395

During the assessment process, scores were determined via consensus and staff from the Office of Safety Recommendations and Communications told us the group generally relied on the expertise of the modal offices to speak towards how each issue aligned with the criteria. Staff then intended to forward the Board any issues that had a total score of 30 points or more. Of the 15 issues assessed, 9 had scores of 30 or more.[11]

The Office of Safety Recommendations and Communication compiles proposed draft list. SRC then began to compile a draft list for the Board. After reviewing the results of the scoring, however, officials from the Office of Safety Recommendations and Communication said

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[11] These issues were: (1) Lack of shoulder harnesses in general aviation, (2) Flight data monitoring for Part 135 aircraft, (3) Weather preparedness and awareness, (4) Speeding, (5) Installing PTC, (6) Pedestrian safety, (7) Collision avoidance technology in highway vehicles, (8) Distractions, and (9) Impairing medical conditions and substances.

they decided not to forward 3 of the 9 issues that met the minimum score based on the following factors:

- "Distractions" had been on the List for years and officials told us they believed the agency had sufficiently advocated in this area already.

- "Pedestrian safety" had no open recommendations. Up until this point of the process, staff said they believed NTSB's safety study on pedestrian safety would be published. Its release, however, had been delayed.

- "Weather preparedness and awareness" had, according to NTSB officials, actions taken by Congress that addressed a number of NTSB recommendations in the issue-area.

The Office of Safety Recommendations and Communication also made a few additional changes to another 3 of the issues that met the minimum score, as shown in fig. 4. In addition, according to NTSB officials, the issue of 'survival factors' was added to the draft list because it was the first issue voted on and staff from the Office of Aviation Safety believed its score did not reflect its risk to transportation safety when compared to other issues voted on afterward. Based on these changes and the addition, 8 issues were forwarded to the Board for consideration.

Figure 4: Changes Made by the Office of Safety Recommendations and Communication during Its Assessment of Potential Most Wanted List Issues
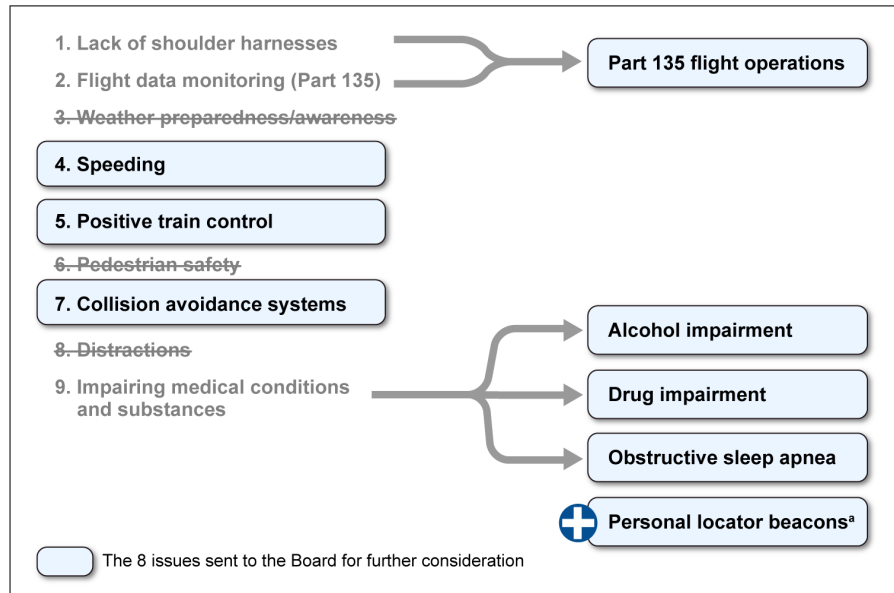
Source: GAO analysis of Most Wanted List of Transportation Safety Improvements documentation. | GAO-20-395

[a]When proposed by the Office of Marine Safety during the facilitated discussions, the issue of personal locator beacons was titled "survival factors (vessels and people)".

Staff then developed titles for the 8 proposed issues. These titles were designed to increase the potential to garner media attention and reflect the safety outcomes the modal offices desired.[12] At this point of the process, SRC staff also said that they identified any and all additional open recommendations associated with each issue. For example, out of the approximate 1,200 open recommendations, they identified 22 recommendations that were associated with speeding-related accidents, ranging from the development of more advanced speed-limiting technologies to an enhanced public awareness campaign by the National Highway Traffic Safety Administration (NHTSA).

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[12] For example, "Eliminate distractions" was included on the final list, and despite the goal of eliminating distractions, staff said they were aware that completely "eliminating" distractions during the list's current two-year timeframe may not be likely, but the agency's aim remains zero transportation fatalities and accidents.

SRC then developed a review package for each of the 8 issues for the Board to help inform its decision.[13] SRC then sent the Board the review package with guidance to approve or disapprove the 8 issues, noting that fewer issues allow more resources to be applied to advocacy efforts for each issue and an increased potential to successfully close recommendations.

The Board reviews and approves final list. The Board then reviewed the package and each Board member was asked to submit their preferences. We reviewed the internal guidance which gave the Board the ability to exercise discretion when deciding which issues to approve and found the Board exercised that discretion during the selection process. More specifically, the guidance stated that Board members could approve or disapprove the proposed issues, suggest modifications to an issue's scope, or suggest different issues. Based on our review of the Board's internal correspondence, we found all five Board members exercised their authority to propose changes. Each Board member issued a memo outlining their suggestions after reviewing the package and initial draft list. The Chairman and two Board members specifically expressed a desire for the List to include 10 issues, in part, noting the concerns about the public perception of a Most Wanted List without 10 issues. The Chairman also told us that an expansion of the List could lead to greater and more effective advocacy opportunities. The Board members' suggestions fell into three areas:

- **Suggested Different Issues:** Four of the five Board members suggested at least one new issue. For example, two Board members proposed adding "Occupant Protection" to the List, because, according to one Board member, it continues to be among the most important measures of reducing fatalities across multiple modes of transportation. Another Board member suggested "Crash Resistant Fuel Systems"—which would later be grouped with "Occupant Protection"—because NTSB had recently completed an investigation of a high-profile accident that found problems with the helicopter's fuel system, which was not crash resistant, and facilitated a fuel-fed post-crash fire.

- **Suggested Modifications to Proposed Issues Scope:** The Board also suggested modifications to six of the eight issues forwarded to it. For example, two Board members suggested combining alcohol and

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[13] The review package included a general description of the concerns, key statistics, key recommendations, potential challenges, and the probability of successfully advocating for the issue, among other information.

drug impairment because, according to one Board member, including them as two separate issues runs counter to contemporary safety messaging and research.

- **Suggested Disapproval of Proposed Issues:** Certain Board members also expressed their disapproval of some issues included in the draft list. For example, three Board members voiced concerns regarding the inclusion of locator beacons because they did not consider it a "top safety improvement". Two Board members also suggested that "speeding" should not be included in the List, in part, because the national desire to address it may be lacking.

After the Board shared their suggestions and concerns internally, officials from the Office of Safety Recommendations and Communication said they sought input from the modal directors regarding the feasibility of the revised issues and modifications. One Board member told us that although the Board has final say, it does not solely order or require the staff to include any of its suggestions. The staff incorporated many, but not all of the Board's suggestions, ultimately adding four new issues and incorporating other suggestions.[14] Staff then proposed a revised 10-issue list that the Board approved.

Methodology Report Detailed a Selection Process That Aligned with Components for Designing a Systematic Decision-Making Process, but the Report Did Not Fully Document and Communicate That Process

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[14] The new issues added were (1) Strengthen Occupant Protection; (2) Eliminate Distractions; (3) Reduce Fatigue; and (4) Ensure the Safe Shipment of Hazardous Materials.

NTSB Published a Methodology Report That Documented Its Selection and Evaluation Process

The National Transportation Safety Board Reauthorization Act required NTSB to publicly publish a report on the methodology used to prioritize and select recommendations to be included on the 2019–2020 Most Wanted List. It also required the report to include the Board's consideration of three elements, specifically:

1. A detailed description of how the Board accounted for the risk to safety addressed in each of its recommendations, including the extent to which the Board considered:

   - The types of data and other information, including studies and reports, used to identify the amount and probability of the risk to safety

   - The reduction of the risk to safety, estimated over a period of time, by implementing each recommendation

   - The practicality and feasibility of achieving the reduction of the risk to safety described above

   - Any alternate means of reducing the risk

2. A detailed description of the extent to which the Board considered any prior, related investigation, safety recommendation, or other safety action when prioritizing and selecting recommendations.

3. A description of the extent of coordination and consultation when prioritizing and selecting recommendations.

In response to the National Transportation Safety Board Reauthorization Act, NTSB publicly published a methodology report that detailed the process it used to prioritize and select issues and recommendations for the 2019–2020 Most Wanted List, and NTSB officials told us the report described the extent to which it considered the three elements. More specifically, officials said that the Board Order that established the Most Wanted List (and attached as an appendix in the methodology report) addressed the elements and said the agency's compliance is reflected in the processes and criteria established within the order. For example, to estimate risk over a period of time, NTSB officials said they would need to do a cost-benefit analysis. The report, however, explained the agency does not conduct such an analysis, because NTSB believes the

recommendation recipient is in the best position to determine the value of the risk reduction. [15]

The National Transportation Safety Board Reauthorization Act did not specify a particular format for the methodology report and NTSB's methodology report did not explicitly detail the link between its processes and the elements identified by Congress. For example, the details on why NTSB does not conduct a cost-benefit analysis—while in the report—are discussed within the section describing NTSB's safety recommendations and the processes associated with their development.

NTSB officials agreed that the report could have had increased clarity on how its process aligned with the elements identified by Congress, but said time constraints affected the content of the report. Specifically, they said when the National Transportation Safety Board Reauthorization Act was enacted (October 2018), the methodology report had already been written and was under review for its release in early February 2019. NTSB is not required to publish a methodology report for future Lists and, according to NTSB officials, the agency does do not plan to do so.

NTSB's Methodology Included Essential Components for Designing a Systematic Decision-Making Process but Decisions Were not Fully Documented or Communicated

In previous work, GAO developed a framework for making risk-informed, systematic decisions.[16] When designing the methodology, we found that NTSB met all seven essential components for the design phase of the framework. By laying the appropriate groundwork for making decisions, NTSB can help ensure that its methodology results in a participatory, logical, and transparent process. See table 5 for more details.

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[15] Pub. L. No. 115-254, § 1106(a), (b). In its methodology report, NTSB was required to describe the extent it accounts for certain risks, such as the reduction of the risk to safety, estimated over a period.

[16] GAO-19-339

Table 4: National Transportation Safety Board's (NTSB) Use of Recommended Components for Designing a Systematic Approach to Decision-Making for the Most Wanted List of Transportation Safety Improvements

Component	Attribute of component	How NTSB met the component
Identify and engage stakeholders	Identify stakeholders—individuals, groups, and organizations—that can influence the decision or that will be affected by the decision and engage them in the decision-making process.	The Board Order specified that internal stakeholders, such as modal directors and other staff, engage in the decision-making process. Other guidance directed NTSB to hold public status updates in which it meets with external groups to discuss the successes, challenges and progress of the list and potentially inform future decisions
Define the problem and decision to be made	Specify the problem that exists, including its context, and then define the decision that is to be made about the problem	NTSB cannot require recommendations recipients to act. The Board Order specified that the program must select 5-to-10 transportation safety issues to advocate for and to potentially spur recommendation recipients into action.
Define the objectives and performance measures	Define the important outcomes or consequences that could be affected by the decision and identify the measures that will be used to estimate and report on the extent to which objectives are achieved by the options	The Board Order specified that the objective was to increase awareness of the agency's recommendations and to advocate the adoption of them. The Office of Safety Recommendations and Communication was directed to identify intended outcomes, such as quantifiable changes in awareness as a result of the agency's advocacy efforts.
Identify constraints	Identify any constraints for decision-making, such as resulting from regulatory, statutory, or budgetary requirements	Every issue must be supported by open safety recommendations, which are calls to actions to address transportation safety issues that NTSB discovered during an investigation or safety study
Identify options	Generate a set of options for addressing the decision that are responsive to the established objectives	The Board Order specified that the modal offices and the Office of Research and Engineering submit preferences to assess for consideration. Using established criteria, each office was asked to submit at least three issues supported by open recommendations.
Identify the decision-making method and rule	Identify a formal, systematic method that will be used to integrate information from the analysis into a basis for making a decision.	The Board Order specified the establishment of an internal review panel. This panel calculated a numerical score for each potential issue as a way to evaluate its relative merit. The directions for this panel also described a scoring system that assigned weights as a way to express preferences about comparative importance.
Develop an analysis plan	Develop a plan that identifies the types of analyses that need to be conducted to assess how well each option performs with respect to the objectives, along with a timeline for completing the analyses	The Board Order generally outlined the types of analyses to be conducted (i.e. facilitated discussions and an internal review panel) as well as its general sequence

Source: GAO analysis of NTSB's internal guidance and GAO-19-339 | GAO-20-395

We found that when implementing its methodology, NTSB did not meet selected essential components for other phases of the systematic decision-making framework. Specifically, NTSB did not fully document how well the different options performed with respect to the established objectives and did not fully communicate how its selections achieved an acceptable balance of performance across the objectives of the program.

GAO-20-395 National Transportation Safety Board

According to the framework, an essential component of analyzing different options is to synthesize, document, and communicate the results of estimated performance when analyzing each option. Based on our evaluation of the methodology's available documentation, we were unable to determine the rationale for the 15 issues proposed by the offices in step 1 of the process or the 8 issues sent to the Board for its consideration in step 3 of the process. For example, the documentation from the modal office facilitated discussions—which proposed the initial issues for consideration—provided little insight into how the selected issues aligned with the criteria or why the proposed issues would be better suited for the List than the others. While we were able to determine the rationale for these decisions through discussions with those making the decisions, the decisions were neither well documented nor transparent. NTSB officials told us their internal guidance does not require this level of documentation but stated they understood how it could be helpful for someone not part of the process to understand the evolution of the issues considered and why certain issues were forwarded through the process. According to internal control standards, it is important to internally communicate necessary quality information to achieve the program's objective, such as insight into key decisions. We have also previously reported on the importance of such documentation for decision-making. To be useful for decision makers, these results should be documented in a way that facilitates consistent comparison of the relative performance of the options and exposes key trade-offs and uncertainties. As we discussed previously, the methodology, as designed, intended the modal offices and Board to have flexibility to propose and select issues for the List. However, this type of discretion and reliance on internal expertise also increases the importance of documenting and communicating decisions. With internal guidance to document key decisions, NTSB would enhance the transparency of its process.

Another essential components of a systematic decision-making framework is to communicate the decision and the rationale—including any trade-offs that were considered—to stakeholders and other interested parties when deciding on which options are preferred. Once the Board selected its preferred options, it did not fully communicate its rationale. In accordance with the Board order, NTSB publicly communicated its final selections, including across multiple platforms, such an online press conference, the methodology report, and other documentation on its website. As part of this communication, NTSB also clearly detailed why each issue is a risk to transportation safety and what NTSB recommends to address that risk, in line with the list's advocacy purpose. Despite clearly detailing an issue's risk to the travelling public, such as providing

annual fatality statistics, NTSB's communication provided limited insight into why these 10 issues were selected for heightened attention. NTSB did not detail why these issues are "ripe for action" now—a key component of the list—including, why the Board believes the selected issues, with additional attention, could be successfully acted upon during the next 2 years. According to internal control standards, management should communicate quality information externally through external lines so that those parties can achieve their objectives. We have also previously reported on the importance of such communication for decision-making. A discussion providing a more robust justification, including a rationale for why NTSB believes it can achieve progress on these issues more than others, within the next 2 years would help ensure that NTSB offers an increased understanding of the program to interested parties, such as Congress, recommendation recipients, and advocacy groups. Such transparency would help enhance the understanding and appreciation for the rigor and thoughtfulness of the decisions.

NTSB Uses Multiple Strategies to Advocate for the Recommendations on the List, but Some Stakeholders Reported Challenges to Implementing Them

NTSB's Advocacy Efforts Target the Recommendations

While NTSB's methodology focused on the selection of issues, the agency's advocacy efforts to promote the List target the associated safety recommendations. As we discussed previously, according to NTSB, the issues serve to garner media attention and allow for interested parties to easily understand the agency's concerns voiced by NTSB officials via the List. The list's recommendations, on other the hand, are the actionable items NTSB wants its stakeholders to pursue. According to the Most Wanted List documentation, implementation of these recommendations can lead to greater transportation safety and the potential to save lives and prevent accidents. NTSB officials told us that while the ultimate goal is to have the recommendations implemented, successful advocacy efforts range from heightened public awareness of its selected issues to

any incremental actions taken towards implementing a recommendation.[17] Given the number of recommendations on the list, some may be more challenging to implement than others. For example, the 2019–2020 Most Wanted List included 11 recommendations that were addressed to all 50 states and the District of Columbia. Agency officials told us they would not expect all 50 state legislatures to adopt the same safety recommendation during the List's 2-year cycle. Thus, if any one state legislature adopted a safety recommendation within that time, the agency would consider it a successful advocacy effort despite not being able to close the recommendation until other states take action as well.

To strengthen and supplement the list as an advocacy tool, NTSB has employed a number of initiatives and strategies. Specifically NTSB:

- **Titled the List the "Most Wanted"**: When establishing the program, agency officials told us the title was selected, in part, to attract media attention and, in turn, help raise awareness of the issues.

- **Expanded the List to 2 years:** NTSB expanded the life cycle of the List from 1 to 2 years; according to NTSB officials, this step allows the Board more time to advocate for the issues and, as a result, to potentially achieve the implementation of more recommendations.

- **Created the "Focused 46":** For the most recent list, NTSB launched the "Focused 46", a highlighted subset of 46 open recommendations that the agency believes can and should be implemented during the 2-year Most Wanted List cycle. According to NTSB officials, they created the "Focused 46" to highlight the most actionable recommendations among the 268 featured on the List.

- **Developed communication and advocacy plans:** Once the Board selects the issues, the Office of Safety Recommendations and Communication developed an overall communications plan that encompasses the overall strategy for the program, including procedures to advocate for the issues through social media and other mechanisms. SRC staff are also required to develop advocacy plans for each issue area that identify key messages, strategies, and tactics to advance issue area goals.

- **Encouraged Board Member advocacy:** NTSB Board members serve as the List's lead advocates. A Board member told us the members are generally responsible for advocating for two of the 10 issues on the List. This advocacy may include media appearances,

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[17] As of January 2020, NTSB closed 35 of its 268 recommendations.

public speaking events and other engagements. In our discussions with officials from the modal offices, three of the five said that a key benefit of including an issue or recommendation on the List is the increased support by the Board. For example, officials from the Office of Marine Safety said when proposing issues for the List, they tried to take into account what issues could be helped most by the Board's involvement.

NTSB officials told us that the List does not necessarily reflect the safety issues with the largest threats to loss of life because it would only include highway issues.[18] A Board Member said that the List addresses issues associated with other transportation modes because, while they may not have high fatality rates, the travelling public may still be affected. In addition, NTSB could also potentially reach a larger audience that may otherwise be unavailable if the List only focused on one or two transportation modes. For example, one Board Member suggested including "weather preparedness", in part, due to a recent marine accident and because it would apply to other modes of transportation (from weather issues in aviation to autonomous vehicle functionality in inclement weather) as well as all marine vessel operations. Further, NTSB officials told us that the inclusion of issues that affect multiple transportation modes might help the agency's advocacy efforts since they can potentially generate increased attention.

Selected Stakeholders Generally Use the List but Most Recommendation Recipients Said Recommendations May be Challenging to Implement

In our discussions with 20 selected transportation organizations, 12 told us the List helps them maintain an awareness of transportation safety issues or information. Based on our discussions with these organizations, we found the extent to which they used the list differed depending on the organization's mission and its role in transportation safety. Generally, advocacy groups, and to a lesser extent industry associations, found more uses to apply the issues and recommendations on the list than recommendation recipients.

Officials at 14 of the 20 organizations said they could use the recommendations on the list as evidence to promote a program, initiate a rulemaking, or corroborate their lobbying efforts, among other uses. For example, one advocacy group said that while working on an initiative to require ignition lock devices in automobiles—a recommendation specified on the 2019–2020 Most Wanted List—they were able to demonstrate the importance to a state legislature by indicating that NTSB identified this

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[18] According to NTSB preliminary data, in 2018, highway accidents accounted for about 95 percent of all transportation-related fatalities.

device as an item on the List. Similarly, all five of the Department of Transportation's (DOT) modal administrations we spoke to said when data and analyses support the need to initiate a rulemaking, NTSB recommendations can enhance the strength of that support.

Advocacy groups and some industry associations said the list can support their organizations in other ways as well. For example, four advocacy groups and industry associations told us that once the list is published, the issues on the list generally receive increased media and public attention that can be used to further the mission of their organization. The increased publicity could be used to highlight the initiatives they are working on in those areas, both to the public and to their own members. Further, four advocacy groups said the recommendations on the list provide expertise that may otherwise be inaccessible, such as ideas for potential solutions to the transportation challenges they regularly face, or validation for initiatives they pursue. One advocacy group told us that because it does not have the resources of a federal agency and cannot conduct its own investigations, the List acts as a resource to identify or validate potential solutions. For example, for the issue "to end alcohol and other drug impairment", NTSB identified 41 potential solutions intended towards various types of organizations. Specifically, it included lowering the blood alcohol concentration (BAC) limit to .05 or lower when driving on its "Focused 46". While one advocacy group, said it did not agree with NTSB's focus on lowering state BAC laws, it appreciated that other recommendations on the List aligned with its views on how to address impaired driving. They also said, however, that it is generally easier to implement the specific solutions that NTSB is focusing its resources on due to the amount of attention the agency can generate.

None of the recommendation recipients said the List influenced its actions or inclination to enact solutions identified in NTSB's recommendations. Because NTSB routinely tracks the status and communicates with its recommendations' recipients, the recommendations' recipients work with NTSB to close recommendations outside of the program.[19] As a result, a recommendation recipient told us that seeing recommendations on the List did not provide a greater urgency to implement them.

Recommendation recipients and some industry associations also identified potential challenges to implementing NTSB's recommendations

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[19] As part of NTSB's recommendation process, it sends a letter containing the recommendation to the recommendation recipient and staff maintains correspondence on each recommendation's current status.

(both those on the List and others). Specifically, eight recommendation recipients we interviewed said that a key limiting factor in the List's usefulness can be its underlying recommendations. We have previously reported that some NTSB safety recommendations may be impractical for industry to implement.[20]

When we spoke to recommendation recipients, they expressed concerns that NTSB does not take into account cost, political sensitivities, or technical feasibility. For example, the Federal Railroad Administration (FRA) said that NTSB had previously recommended that breathalyzers for train operators be installed on all trains. FRA estimated that the installation cost would be approximately $80 million initially and $20 million per year for maintenance. After evaluating the potential costs and benefits, FRA officials told us that they did not pursue a rulemaking. Officials from the Federal Motor Carrier Safety Administration (FMCSA) also said that NTSB's recommendation language may be too prescriptive and may often require the agency to initiate a rule-making—a politically sensitive process. For example, in 2011, NTSB issued a recommendation to FMCSA to prohibit the use of both handheld and hands-free cellular telephones in commercial vehicles, except in emergencies. While FMCSA and the Pipeline and Hazardous Materials Safety Administration published a final joint rule prohibiting interstate truck and bus drivers from using-hand held mobile phones, according to the letter they send NTSB, they did not have sufficient research, crash data, or information to support a more expansive prohibition for all hands-free mobile telephones. However, because FMCSA could not achieve a ban for both handheld and hands-free cell phones, NTSB classified the recommendation as "closed" with an "unacceptable action".

NTSB officials told us that they were aware of these challenges, but noted that the agency does not develop a recommendation based on its ease of implementation but rather on if it could stop an accident from recurring. As we discussed earlier, in respect to cost, NTSB believes the recommendation recipients are in the best position to determine the value of risk reduction. Further, NTSB officials told us because technology and political dynamics are ever changing, they consider best practices to identify the solutions that will help ensure an accident will not recur. For

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[20] GAO-07-118. In this report, we made five recommendations to NTSB, including being more proactive in identifying and correcting safety problems before accidents occur and developing risk-based criteria for determining which accidents would provide the greatest safety benefits to investigate, among three others. NTSB has implemented all five recommendations.

example, officials said that although the agency does not consider the availability of ready-to-use technology, it considers elements of currently available technology and the potential to have the technology fully developed when making recommendations. In 1970, when NTSB issued its first recommendation on positive train control (PTC), NTSB officials told us they knew the technology—while not feasible or available at the time—could be developed in the future. As of January 2019, PTC had still not been fully implemented among all required railroads, and as a result, was included once again on the List.[21]

Conclusions

NTSB's Most Wanted List is designed to attract attention to issues impeding safe transportation. The credibility of the List is vital to rally support and resources to tackle often difficult and longstanding transportation safety challenges. Accordingly, it is critical that the evaluation and selection process be transparent to show interested parties why NTSB is choosing to advocate for selected issues and associated recommendations. Limited documentation while evaluating potential issues and not fully communicating the Board's selection decisions can call into question the merit of the selected issues, potentially affecting stakeholders' level of focus and action to address them. Providing this transparency could enhance users' confidence in the List and help NTSB achieve continued improvement in transportation safety.

Recommendations for Executive Action

We are making the following two recommendations to NTSB:

The Chairman of the Board should require the Safety Recommendation and Communication team to fully document its evaluations when assessing items to propose for Most Wanted List consideration (Recommendation 1).

The Chairman of the Board should take steps to publicly and fully communicate the selection rationale, such as including why NTSB believes an issue is "ripe for action" to its documentation on its website (Recommendation 2).

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[21] Certain railroads were required to implement PTC by December 31, 2018, but would receive extensions up to December 31, 2020 if specific statutory requirements were met. 49 U.S.C. § 20157.

Agency Comments

We provided a draft of this product to the National Transportation Safety Board for comment. NTSB concurred with our recommendations in its written comments, reproduced in appendix III. NTSB also provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees and the National Transportation Safety Board. In addition, the report is available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-4841 or bertonid@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.

Daniel Bertoni
Managing Director, Physical Infrastructure

Appendix I: List of Selected Organizations

1. National Highway Traffic Safety Administration
2. Federal Aviation Administration
3. Federal Railroad Administration
4. Pipeline and Hazardous Materials Safety Administration
5. Federal Motor Carrier Safety Administration
6. Texas Department of Transportation
7. Metropolitan Transportation Authority
8. Association of American Railroads
9. Governors Highway Safety Association
10. American Bus Association
11. Advocates for Highway and Auto Safety
12. Aircraft Owners and Pilots Association
13. American Pilots Association
14. FIA Foundation
15. The Foundation for Advancing Alcohol Responsibility
16. Mothers Against Drunk Driving
17. National Business Aviation Association
18. National Safety Council
19. Red Means Stop Traffic Safety Alliance
20. The American Automobile Association

Appendix II: NTSB's Offices' Consideration of Criteria when Selecting Issues to Propose for the Most Wanted List

NTSB's four modal offices and the Office of Research and Engineering exercised their discretion when considering criteria when identifying issues for potential inclusion on the Most Wanted List. Because they were not required to prioritize any particular criteria, other than an open recommendation, each office used a different process to determine the issues to propose for inclusion on the Most Wanted List. They described their considerations as the following:

Office of Aviation Safety

Officials from the Office of Aviation Safety told us they prioritized the office's own data to identify trends when first discussing which issues to propose. Because the Office of Aviation Safety investigates over 1,300 domestic aviation accidents and incidents annually, NTSB administers a comprehensive aviation accident database. The database contains information for every civil aviation accident since 1962 and some selected incidents.[1] For example, the aviation officials said they identified a trend showing an increase in the number of aircraft fatalities involving commuter and on-demand flight operations, though the accident rate remained constant.

Once the officials identified data trends, they told us they examined their recent open recommendations to determine which of their recommendations could potentially address those concerns. They then said they studied the potential risk exposure of their recommendations. For example, they said that while larger commercial carriers (part 121 aircraft) operate under more stringent regulations, more people fly commercial airliners and thus, the exposure to risk would be higher. Officials also told us they likely had the most complete dataset, which lends itself to an evidence-based approach, while other modal offices rely more on a sample of data and accidents.

Office of Highway Safety

According to officials from the Office of Highway Safety, they first considered their more recent products that included open recommendations. They said that more recent issues may be more likely to garner increased attention, a key component of the Most Wanted List's advocacy efforts. Moreover, because the responsibility is to investigate crashes, they said they wanted issues that could have an immediate effect following their investigations.

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[1] According to NTSB, incidents are occurrences, associated with aircraft operation, that are non-fatal; do not result in serious injury or substantial damage to the aircraft; and affects or could affect safety operations.

**Appendix II: NTSB's Offices' Consideration of
Criteria when Selecting Issues to Propose for
the Most Wanted List**

After focusing on the more recent products, officials told us they relied on data to identify the effect and the potential risk. Specifically, the office used data from the National Highway Traffic Safety Administration and data from other non-federal sources, such as the Insurance Institute for Highway Safety. The officials also said the Office of Highway Safety encounters over 36,000 annual fatalities, significantly more than any other transportation mode, and do not have the flexibility to choose which crashes to investigate. As a result, they said they generally investigate crashes with safety issues with potential countermeasures that may have the greatest potential effect on safety. Based on these investigations and the potential safety results of their recommendations, they proposed specific issues.

To determine which of those issues to put forward for consideration, officials told us they consider the likelihood of success as well as an issue's effect on overall safety. Specifically, they said that they try to determine if inclusion of the issue on the List could lead to achievable and measurable results in the next 2 years.

Office of Marine Safety

While the Office of Marine Safety tried to prioritize data, officials said the lack of available data limited their efforts. Specifically, officials told us they only investigated about 50 accidents in 2019—a small sample of total accidents. The United States Coast Guard administers a larger database—it tracks and records about 5,000 accidents per year—but that data are private and protected. Thus, the Office does not have open access to the data and must request specific queries.

As a result, the Office said they generally relied on a more qualitative approach. By studying their past investigations, they identified probable cause trends across multiple accidents. For example, they identified fatigue and distractions as a frequent contributor to marine accidents. They then told us they examined then which of those issues could potentially pose the largest threat to life and injury to marine operators. To determine which of those issues to put forward for consideration, officials said they focused on the issues where they have had most difficulties influencing recommendation recipients to act. They told us the Board's involvement with the advocacy efforts for the issues on the Most Wanted List helps raise awareness of the issue.

Office of Rail, Pipeline, and Hazardous Materials

According to officials from the Office of Rail, Pipeline, and Hazardous Materials, they sought to identify potential trends based on their investigations, in part, because fatality data are not statistically significant when taking into account all transportation related fatalities. They studied

**Appendix II: NTSB's Offices' Consideration of
Criteria when Selecting Issues to Propose for
the Most Wanted List**

their recent accident investigations and identified similar probable causes instead. According to NTSB officials, they identify which, if any, of those issues have been long-standing and difficult to gain traction on. For example, they said they proposed Positive Train Control (PTC), despite the issue being left off previous lists, because compliance has been difficult to enforce. At this point in their considerations, officials said they took into account some of the external feedback they had heard from recurring meetings with DOT and interactions with industry groups. This communication provided insight on the likelihood of successfully closing the recommendations. Further, when possible, officials said they tried to consider what trends could potentially be applied to multiple transportation modes.

Office of Research and Engineering	Unlike the other four modal offices, the Office of Research and Engineering does not lead investigations. Instead, the office provides technical expertise to accident investigations and conducts safety research that examines safety issues in all modes of transportation. Further, officials said the office's safety research reports are based on analyses of transportation accident data. As a result, since all of the office's safety research reports are initiated by data trends, officials said they did not separately consider data when determining the issues to propose. Instead, they told us they first prioritized cross modal relevance, such as the need for recorders or reducing drug and alcohol impairment. Once they identified multi-modal issues, they said they focused on the most recent research. Then, they told us they considered the potential risk and selected the issues that could save the most lives.

Appendix III: Comments from the National Safety Board

March 3, 2020

Mr. Dan Bertoni
Managing Director
Physical Infrastructure Issues
Government Accountability Office
441 G Street NW
Washington, DC 20548

RE: Comments on Draft Report GAO-20-395, "NATIONAL TRANSPORTATION SAFETY BOARD: More Detail on the Selection Process Could Increase the Understanding of its Most Wanted List of Transportation Safety Improvement"

Dear Mr. Bertoni:

Thank you for the opportunity to review and comment on this draft report. We appreciate your work in conducting this review and making recommendations to improve our process for developing our Most Wanted List of transportation safety improvements (MWL).

As you know, the purpose of the MWL is to increase awareness of and support for our safety recommendations, which are the critical safety improvements that industry, government, and the public must make across all modes of transportation to prevent accidents, reduce injuries, and save lives. We agree with the report's conclusion that "the credibility of the List is vital to rally support and resources to tackle often difficult and longstanding transportation safety challenges," and that our process of evaluating and selecting the issues we include on the list should be transparent. Indeed, transparency is one of the core values that guide our daily actions, our internal conduct, and our relationships with our stakeholders.

The draft report contains the following two recommendations, with which we concur:

The Chairman of the Board should require the Safety Recommendation and Communications team to fully document its evaluations when assessing items to propose for Most Wanted List consideration (Recommendation 1).

The Chairman of the Board should take steps to publicly and fully communicate its selection rationale, such as including why NTSB believes an issue is "ripe for action" to its documentation on its website (Recommendation 2).

Following the public release of the report, we will provide a written statement on actions taken or planned on each recommendation, in accordance with 31 *United States Code* section 720.

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Again, thank you for the opportunity to review and comment on this draft report. If you have any questions, please feel free to contact me directly, or contact Christopher Wallace, Director of Government and Industry Affairs, at (202) 314-6007.

Respectfully,

Robert L. Sumwalt, III
Chairman

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact	Daniel Bertoni, (202) 512-2834 or bertonid@gao.gov
Staff Acknowledgments	In addition to the contact named above, Susan Fleming (Director), Maria Edelstein (Assistant Director), Ross Gauthier (Analyst-In-Charge), and Svetlana Cunningham made significant contributions to the report. Also contributing to this report were Delwen Jones, Terry Richardson, Malika Rice, and Crystal Wesco.