

2018-2019 Business Plan

National Operations Center of Excellence

Effective October 1st, 2018 through September 30th, 2019

Current Version: November 25, 2019

Table of Contents

1	Executive Summary	4
2	Introduction	5
2.1	Background.....	5
2.2	Guiding Considerations	5
2.3	Schedule of Services.....	8
3	Services and Products.....	9
3.1	Core Service and Products	9
3.1.1	NOCoe Website.....	9
3.1.2	Research Needs Database	10
3.1.3	On-demand Resource Identification Service	10
3.1.4	In-person Peer Exchanges.....	11
3.1.5	Webinars	12
3.1.6	<i>National TSMO Summit</i>	12
3.1.7	Digital Outreach	13
3.2	Rotating Services and Products.....	14
3.2.1	Case Study Development	15
3.2.2	Virtual Peer Exchange (VPE)	16
3.2.3	TSMO Agency Engagements	16
3.2.4	Student Engagement	17
3.2.5	External Outreach	18
3.2.6	National TSMO Award	18
3.3	Initiative-based Services and Products	20
3.3.1	Marketing Plan.....	20
3.3.2	TSMO Workforce Development Summit Follow Up.....	22
3.3.3	Leading the TSMO Vision Summit Follow Up	25
4	Performance Metrics.....	25

1 Executive Summary

The National Operations Center of Excellence (NOCoE) is currently maturing into the resource center envisioned by the strong partnerships of its founding organizations – the American Association of State Highway Transportation Officials (AASHTO), the Institute of Transportation Engineers (ITE), the Intelligent Transportation Society of America (ITSA), and the Federal Highway Administration (FHWA). The past four years, NOCoE has been guided by the ongoing and active participation of its Board of Directors and Technical Advisory Committee (TAC) in helping to achieve NOCoE’s vision and mission.

The purpose of the 2018-2019 Business Plan is to guide the products and services to be offered or facilitated by NOCoE throughout the planning year effective October 1, 2018.

The past several years have demonstrated there is a consistent demand for particular services but we’ve also identified new opportunities to serve the TSMO community. The Center’s services are listed below and described in this business plan.

<u>Core Services</u>	<u>Rotating Services</u>	<u>Initiative-based Services</u>
<ul style="list-style-type: none"> • NOCoE Website • Research Needs Database • On-demand Resource Identification Service • In-Person Peer Exchanges • Webinars • National TSMO Summit • Digital Outreach 	<ul style="list-style-type: none"> • Case Study Development • Virtual Peer Exchanges • TSMO Agency Engagement • Student Engagement • External Outreach • National TSMO Awards 	<ul style="list-style-type: none"> • Marketing Plan • Leading the TSMO Vision Summit Follow Up • TSMO Workforce Development Summit Follow Up

While this Business Plan is formally released annually, the services and products are updated on a continual basis, as new details become available for the various product and service offerings, and as ongoing discussions warrant modifications to NOCoE’s thematic priorities. As always, the latest product and service offerings for NOCoE, along with the most recent version of the Business Plan, can be found at the NOCoE website, transportationops.org.

Sincerely,



Patrick Son, P.E.
 Managing Director, NOCoE



Niloo Parvinashtiani
 Technical Services Associate, NOCoE

2 Introduction

2.1 Background

NOCoE exists as a partnership of AASHTO, ITE, and ITSA, with support from FHWA. It exists to provide a single-point-of-contact for the Transportation Systems Management and Operations (TSMO) community to access a wide range of resources related to best practices, training and skill development, technical assistance, communities of practice, and other opportunities to assist them in learning about and enhancing their knowledge of TSMO-related activities. These resources are available through a variety of means, including webinars, peer exchanges, workshops, conferences, and a national summit.

NOCoE relies on the commitment of its stakeholders and funding sources to operate and provide much-needed services to support the TSMO community. FHWA is currently one of the significant funding providers, facilitated through a cooperative agreement with AASHTO. Also, individual state DOTs can make voluntary financial contributions towards NOCoE's technical services programs through AASHTO's own Operational Technical Services Program (OSTP). In-kind contributions are also provided by AASHTO, ITE, and ITS America in the form of overhead and logistical support (e.g., office space for NOCoE headquarters).

2.2 Guiding Considerations

The stakeholder contributions and funding support are provided for NOCoE to achieve the goals identified by its Board of Directors in line with its stated vision and mission. NOCoE's vision, mission, and strategic goals are as follows:

Vision: The National Operations Center of Excellence (NOCoE) will be the recognized leader in providing exceptional services to the transportation systems management and operations (TSMO) community to save lives, reduce congestion, and enhance economic vitality.

Mission: The NOCoE empowers the TSMO community to succeed by enhancing knowledge, skills, and abilities.

Strategic Goals:

1. Educate, train, and develop transportation agency officials and other TSMO practitioners by offering reliable information and professional development opportunities.
2. Increase awareness and understanding of NOCoE.
3. Bring together the TSMO community.
4. Accelerate the deployment of techniques and technologies to optimize mobility and safety.

In addition to the above guiding elements, the NOCoE Board of Directors has developed the following value proposition/brand promise for the Center:

At the National Operations Center of Excellence, we support the people who operate the nation's transportation management systems by connecting them with best practices and experts to save lives, time, and money.

In pursuit of the fulfillment of the vision, mission, goals, and brand promise, a Technical Advisory Committee (TAC) guides NOCoE staff on various aspects of the Business Plan. These volunteers represent the partner associations and AASHTO working groups listed below:

- Brad Freeze (Chair), Tennessee DOT
- Tony Kratofil, Michigan DOT
- Galen McGill, Oregon DOT
- Joseph Sagal, Maryland SHA
- Peter Keen, Digital Traffic Systems
- Beverly Kuhn, Texas A&M University
- Patrick McGowan
- Gummada Murthy, AASHTO
- Carlos Alban, ITS America
- Eric Rensel, Gannett-Fleming
- Tracy Scriba, FHWA
- Nicolaas Swart, Maricopa County (AZ)

The TAC members are a direct link to the TSMO stakeholder community through their day-to-day professional interactions. The TAC serves as one of the main entities to provide input to the NOCoE Managing Director by communicating the needs of the TSMO stakeholder community. Also, a liaison from FHWA participates on the TAC and provides coordination between NOCoE and the FHWA Office of Operations.

Through consultation with the TAC, NOCoE staff have worked diligently to develop and refine the technical service and outreach strategies contained in this Business Plan. The following principles have been formalized to drive the development of the Business Plan, and to weigh the value of individual products, services, and activities:

- **BUILD** on the framework and recommendation of services proposed in past Business Plans as the basis for the new plan, modifying the approach as appropriate to capture more recent stakeholder interests and needs.
- Provide services that **AMPLIFY** the good work of TSMO practitioners, by providing exposure to a broader segment of the collection of practices and activities being produced or considered within the TSMO community.

- **CONNECT** TSMO practitioners to existing tools and resources, through a hub-and-spoke model that avoids the duplication of efforts from other agencies (see Figure 1).
- **ENGAGE** the TSMO community whenever possible in the execution of technical services, over and above making simple connections.
- Based on these considerations, **EVALUATE** and **PRIORITIZE** services to meet the TSMO community's needs.

How NOCoE amplifies, connects, and engages in pursuit of the fulfillment of the Business Plan can be described using a “hub-and-spoke” analogy. Within the TSMO community (as well as the broader transportation industry) there are a variety of best practices, training materials, and research products that are of interest to TSMO practitioners. However, these practitioners face numerous demands in their day-to-day job functions and cannot often spend the required time and effort to reach out to the various institutions where the knowledge resources are housed. Thus, there is an immense value for an organization such as NOCoE to provide the means of facilitating these interactions, so that the disparate body of resources on TSMO can be accessed in one centralized location.

A visual portrayal of this relationship can be seen in Figure 1.

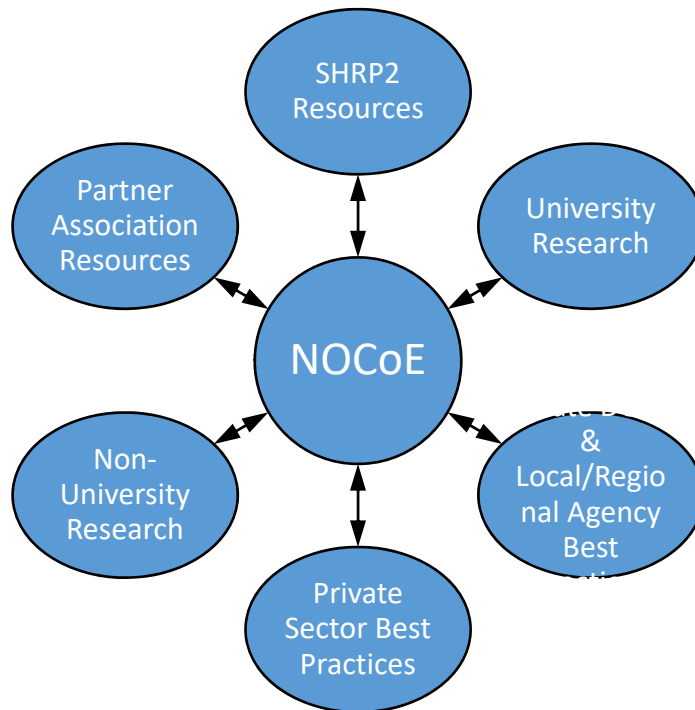


Figure 1 NOCoE "Hub-and-Spoke" Concept of Operations

It is important to distinguish this hub-and-spoke model from the more traditional notion of a “one-stop-shop.” In a typical one-stop shop setup, the central organization is responsible for generating most, if not all of the content that it shares out to the community. Creating content

is not the intended role for NOCoE within the TSMO community. Instead, NOCoE staff directly engage various organizations with the content of their own, in addition to generating its content on a limited basis, and provides a series of channels by which this fusion of knowledge can be widely shared.

2.3 Schedule of Services

The focus products and activities within the Business Plan are targeted for a one-year implementation plan (that is, achievable within the current Business Plan year-Oct 1st 2018 to September 30th, 2019). The information dissemination and engagement tools (website, newsletter, etc.) presented in the OEP are both standalone NOCoE resources as well as processes supporting the prioritized products and activities within the TSP. The current Business Plan and all subsequent Business Plans will be effective from October 1st until September 30th of the following year.

3 Services and Products

3.1 Core Service and Products

The following services constitute a fundamental part of NOCoE's capabilities and value proposition to the TSMO community and should be offered up on an on-going basis. NOCoE Website (continuously)

- Research Needs Database (continuously)
- On-demand Resource Identification Service (continuously)
- In-Person Peer Exchanges (four per year)
- Webinars (two per month)
- National TSMO Summit (every two years)
- Digital Outreach (continuously)

3.1.1 NOCoE Website

The NOCoE website (www.transportationops.org) offers links to resources, including a calendar of events, TSMO news, and a knowledge database of TSMO content. The NOCoE website is a "pull" method of communication in that people choose to visit the site looking for specific information. The website is distinct from "push" communication services where content is sent to users, such as the newsletter.

3.1.1.1 TSMO Knowledge Center

One of the most significant motivations for the existence of NOCoE is the need to quickly respond to gaps in technical and training materials for practitioners within the TSMO community. In the spirit of this pursuit, it is incumbent on NOCoE to identify significant thematic areas within TSMO where Self-Contained Knowledge Centers can provide the guidance and collection of resources to point practitioners to a collection of resources around a particular topic.

An example of this concept is the Signal Phasing and Timing (SPaT) Challenge. The collection of pages allows for resources to be directly shared by any group and entity that is producing material. The [front page for of the SPaT Challenge](#) pages provides a well-organized and interactive area where users can access the entirety of SPaT Challenge resources in one location.

The NOCoE team executes scans of organizational partners and for TSMO and ITS related materials for the website. For the most part, new content is discovered and added to the website on a weekly basis. However, many resources exist within various associations and public agencies that still need a connection to NOCoE's website. This strategy is consistent with the "hub-and-spoke" concept for NOCoE laid out in Figure 1. The priorities for new entries of this information into the content management system are foundational documents in the TSMO area of practice, as well as information on current applications and technologies in practice.

To support the effort to expand the content database, external contractors and student interns regularly assist NOCoE staff in identifying and loading these resources/documents into the

Website's content management system. Also, NOCoE works with industry groups, councils and committees to identify functionality or resources through the website to advance the TSMO practice.

3.1.2 Research Needs Database

TSMO research is vital to growing the future practices of the industry. Research is being conducted at the national level, through TRB, NCHRP, and FHWA, at the state level, by MPOs and pooled fund programs, and a variety of other sources. As the level of research increases, clarity around industry efforts is required to ensure effective research practices. The AASHTO CTISO Research Development and Implementation Coordinators have worked with NOCoE to provide a centralized hub for TSMO research, the Research in Operations (ROPS) database, which serves as an online repository for sharing and rating new transportation operations research ideas. The National Operations Center of Excellence maintains and supports ROPS with support from AASHTO.

Ideas for TSMO-related research are welcome from practitioners across the transportation community, whether public or private. AASHTO's Committee on Transportation System Operations and Transportation Research Board's Operations Section Committees have the responsibility for regularly reviewing the ideas in ROPS to gauge each research idea's merit for practitioners. These committees consider all new ideas submitted during the annual research review cycle that typically occurs in the summer. Visitors to the website will be able to track the selected research ideas for development, and ideas submitted from previous cycles will be maintained in the database. Visitors will also be able to numerically rate individual ideas, and provide supporting comments, as new sources of information around specific topics become available.

The ROPS database is intended to provide timely, organized, and searchable content on current or archived research ideas in transportation operations. These ideas form the basis for the research priorities and recommendations for such programs as the National Cooperative Highway Research Program (NCHRP), NCHRP 20-07 (Synthesis Topics), IDEA, Domestic Scans, U.S. DOT, and Pooled Fund Studies (PFS). As the research ideas in ROPS are implemented, links will be provided to TRB's Research in Progress (RiP) database to find out more about their status. Once research is complete, the ideas in the ROPS database will be updated with links to the US DOT and TRB TRID catalog to find additional information and annual reports.

3.1.3 On-demand Resource Identification Service

NOCoE is committed to providing support to the TSMO Community through regular interactions. NOCoE continues to work with its current base of TSMO practitioners to deepen and engrain the NOCoE relationship with our base practitioner peers but also to expand NOCoE use among existing TSMO participants and increase awareness and outreach to new audiences. A variety of support is provided through direct calls and emails on NOCoE resources, technical services, events, and initiatives as needed.

3.1.4 In-person Peer Exchanges

Leading up to the launch of NOCoE, in-person peer exchanges were identified as an important need for the TSMO community as both public agency officials and other practitioners were very clear about the advantage of learning from their peers in a face-to-face environment. The ability to meet for a day or two and to be able to listen, discuss challenges, form solutions, and collaborate on efforts are the basis of these peer exchanges. NOCoE may initiate the in-person peer exchanges or they may be requested by a specific agency. As NOCoE matures, the requests and the need for peer exchanges will increase and given limited funding, NOCoE will be required to make sound decisions on the selection of peer exchanges. The suggested criteria to select future peer exchanges is as follows:

In advance of each peer exchange, a document is created, or submitted by the requesting agency, entailing the following topics:

1. Purpose/objectives of the peer exchange
2. Expected outcome
3. Number of agencies participating
4. Method/mode of distribution (through NOCoE) of the findings with the larger TSMO community
5. Follow-up approach to assess the effectiveness of the peer exchange

Criteria for selecting peer exchanges:

1. Purpose/objectives of the peer exchange are well defined
2. The impact (influence) is regional/widespread
3. Proposed outcomes are well defined
4. Cost and cost sharing
5. Level of interest by all stakeholders
6. The maturity of the topic(s)
7. A clear indication of a well proposed follow-up approach
8. Previous requests by the same agency or the region, along with past peer exchanges on the same topic.

The current TSP is planning to execute four peer exchanges at a minimum, and additional peer exchanges can be considered based on scheduling and resources. The current operating mentality is that peer exchanges should not have submission deadlines, but instead be considered on a rolling basis. Peer exchanges will be selected by the Technical Services Manager/Associate, in consultation with the Managing Director and the TAC, based on the criteria mentioned above.

For the 2018-2019 business plan year, it is intended to execute the four peer exchanges within the first half of 2019 after consideration of other national meetings that may provide conflicts

for potential participants. Planning will begin immediately with topic and planning team selection for each peer exchange.

3.1.5 Webinars

For this plan, the webinars are organized into three categories, 1) Webinars planned, created, and hosted by others with promotion assistance by NOCoE, 2) Webinars planned and created by others but hosted by NOCoE and 3) Webinars planned, created, and hosted by NOCoE.

1. **Webinars planned, created and hosted by others:** These are webinars planned, created, and hosted by others, and NOCoE has been merely approached to help promote them. This category requires a very minimal effort on part of Center's staff. An example would be a webinar conducted by TRB.
2. **Webinars planned and created by others but hosted by NOCoE:** Other partners mostly plan these webinars, though NOCoE may have also taken an active role in planning them. NOCoE's primary role is to promote them and provide hosting/registration resources. An example of this type of webinar would be: "Securing Transportation Systems," which was planned and created by FHWA and hosted by NOCoE. NOCoE posts the recordings from these webinars afterward to enable on-demand learning.
3. **Webinars planned, created, and hosted by NOCoE:** These webinars require significant staff time to plan. NOCoE may conceptualize this type of webinar based on stakeholder needs, determine speakers, assist with agenda development and the contents of the webinar, market and assist with registration, host the webinar, and post the recording.

The cooperative agreement between AASHTO and FHWA stipulates at least one webinar per month. Based on the needs and requests from various partners and TWGs, NOCoE aims to host approximately 24 webinars annually (two per month).

A standard measure of success for a webinar is normally identified the total number of participants taking part, however, but this doesn't always capture the complete knowledge transfer. Many times, the webinar recording video on NOCoE YouTube channel creates additional views with extended watch time in addition to webinar's live audience, so NOCoE has committed to collecting YouTube metrics to supplement the standard measure of live participants.

3.1.6 National TSMO Summit

NOCoE has allocated funding for the development and execution of a periodic national-level Summit on an as needs basis, determined by the Board and TAC. The purpose is to focus on a significant TSMO topic at the national level and identify action items and a collective solution to resolve this specific problem/issue. The potential exists for a 3rd TSMO summit to be planned and executed in 2019 but it may be necessary to conduct further foundational work through webinars, white papers, task/working groups, etc., before coming to a consensus on the issue/topic to focus attention on at the national level. See section 3.3.2 and 3.3.3 for more information on the 2016 and 2018 TSMO Summit follow up action items.

3.1.7 Digital Outreach

The NOCoE newsletter is sent every two weeks through an HTML email service (MailChimp). The same email service is also used to push announcements for various NOCoE activities, such as upcoming webinars to the same subscriber list. Similarly, the NOCoE blog comprises items from the bi-weekly newsletter, along with the posts on other topics and events.

The Communications Manager collects and develops content for the newsletter and blog with oversight from the NOCoE Managing Director and contributions from the Technical Services Manager/Associate, as well as partner associations. In addition to news, webinar announcements, and webinar videos, the content selection aims to contain leadership thoughts, strategies, and ideas as well as practice sharing by peers – synergizing with a reader’s perspective of, “What is in it for me?”

The goals for the NOCoE newsletter and blog are as follows:

- Provide high-level content for TSMO practitioners around TSMO leadership topics and the application of TSMO strategies and technology.
- Direct users to the NOCoE website through original story leads in the newsletter.
- Increase engagement with partner associations (ITE, AASHTO, ITSA, FHWA) and external agencies and practitioners to contribute content and articles.
- Encourage and invite TSMO Practitioners of all levels to contribute material to the newsletter especially that which demonstrates good, solid TSMO practices
- Establish NOCoE as a valued resource for TSMO community.

Additional digital tools are utilized to effectively disseminate information to and engage with the TSMO community. These are outlined in Table 1.

Table 1 - Communications tools, key audiences, content, and timing

Communications Tool	Key Audience Considered	Content	Timing
Newsletter	All Audiences	Special initiatives, technical services, new resources, and events	Bi-weekly
Website Updates	<ul style="list-style-type: none"> • States, local, and regional DOTs (all levels) • Private sector TSMO practitioners 	Special initiatives, technical services, new resources, and events	Weekly
Twitter	<ul style="list-style-type: none"> • States, local, and regional DOTs (all levels) 	TSMO benefits, activities, as well as	Daily

	<ul style="list-style-type: none"> • Private sector TSMO practitioners • Students and universities • Broader transportation community (less aware of TSMO) 	events and activities around the NOCoE	
LinkedIn	<ul style="list-style-type: none"> • Students and universities • Broader transportation community (less aware of TSMO) 	TSMO benefits	Weekly to Monthly
Direct Calls and Emails	Content dependent	Technical services, events, and initiatives such as solar eclipse or workforce	As needed

3.2 Rotating Services and Products

The following services are considered outside of the core service program and NOCoE consults with the TAC and partner organizations to determine the value of these services to the community before budget and staff resources are committed. The services and products typically have an irregular schedule or are relevant to a select group of stakeholders:

- Implementing several instances of the service in short succession over a period of months, or within the same Business Plan Year
- Committing to offering the service on a regular, albeit less frequent basis (e.g., annually or biennially)
- Providing the service on a rotating basis, in response to specific requests or partner activities, in due consideration of other commitments at the time.
- Topically focused service that services a distinct group of practitioners (assumption is that the topic has national implications and value)

Examples of this rotating class of services may include the following:

- Case Study Development
- Virtual Peer Exchanges
- TSMO Agency Engagement
- Student Engagement
- External Outreach

- National TSMO Awards
Additional webinars

3.2.1 Case Study Development

The NOCoE case studies capture stories on how agencies implemented TSMO strategies to address operational transportation issues. The purpose of case studies is to share experiences and noteworthy practices across organizations. The case studies follow a replicable narrative flow that highlights the agency's unique approach in a variety of TSMO topics. The case study format includes:

- What is unique and important about how the agency does TSMO.
- How the TSMO practice helps accomplish the larger transportation vision.
- Why this approach came to be (plus who championed it and how was it implemented).
- What is working and what needs more work (challenges, drawbacks, etc.)
- Additional resources around the practice or topic area.

An example of a recent case study on “Corridor-Wide Planning Ahead of the Amtrak Cascades Derailment” can be found [here](#).

Case study topics are drawn from TSMO agency engagements, initiatives such as workforce development activities, and the TSMO Award submissions. The case studies include the following general sections:

Background - History and situation that led to a need for a TSMO solution

TSMO Planning, Strategies and Deployment - TSMO implementation process from beginning to end

Communications Planning and Execution - Communications process with the public, within your agency, and if applicable, coordination with other agencies

Outcome, Benefit and Learnings - How the TSMO solution worked, any public or community benefit and lessons learned

NOCoE aims to develop 3 – 6 case studies each quarter, starting with Fall 2018 and will ask for assistance from partner organizations in both sourcing materials and the development of case studies.

In addition to becoming part of the knowledge center and serving as tools to capture high quality TSMO practices, NOCoE will also use case studies in its marketing efforts around speaker placement, TSMO Champion development, and trade media stories. By formally capturing specific TSMO practices, NOCoE is better able to highlight the importance and benefits of TSMO to the broader industry and the traveling public.

3.2.2 Virtual Peer Exchange (VPE)

A virtual peer exchange is similar to a webinar in delivery, except that participation is more interactive and the audience is limited. Typically, webinars will be marketed for getting the most attention (and therefore participation), while VPEs will have a smaller participatory audience due to the focused and interactive nature of discussions. Despite the typically smaller nature of these events, a recording is made available for general access following the VPE, and additional invitees may be included as a “listen only” audience. Given their structure and more focused level of interaction, VPEs will most likely be driven by single and specific topics of interest.

3.2.3 TSMO Agency Engagements

NOCoE TSMO agency engagements involve NOCoE staff to holding a day to day-and-a-half conversations with TSMO leaders at their DOTs, including meeting with TSMO agency practitioners, partner agencies, and other stakeholders involved in that state’s TSMO efforts. The overarching goals of the visit are to:

- Provide an opportunity for the agency to engage all the relevant departments in the TSMO discussion
- Provide an opportunity for the agency to have an internal peer to peer discussion on successes, strategy, and team coordination
- Learn from TSMO agencies about their program, business case, growth, and challenges.
- Establish relationships with TSMO practitioners and users of NOCoE services and products. Speak directly with users of the NOCoE knowledge center and services about how they interact with NOCoE and what they need to further their practice.
- Identify topics for case studies or other knowledge transfer tactics that could benefit the entire TSMO community.
- Collect materials to be included in the knowledge center, such as program planning documents, presentation materials, and any resources potentially useful to the broader community.
- Identify and develop TSMO Champions who we can equip to work within their agency to advance the practice of TSMO

A common remark from the agencies after each of the first four visits was that these engagements presented an opportunity for their internal team to meet and discuss their successes, strategy, and team coordination in a manner that is not typical, yet highly beneficial to their team. In this manner, these engagements serve as an opportunity for even the most forward-thinking TSMO departments to recodify their mission and evaluate both their achievements and challenges.

Identification of agencies for this service is will initially be by NOCoE staff and discussed with the TAC to determine the order and consideration of each agency. Priority will be given to those with an existing TSMO program plan along with TSP Contributions for State DOTs. Local and regional agencies will be considered on a case by case basis.

3.2.4 Student Engagement

3.2.4.1 *E-portfolio Contest*

NOCoE engages students around TSMO and advocates for the development of the workforce via the annual TRB ePortfolio contest. Initiated by the TAC in 2017, the ePortfolio contest highlights the student's ability to creatively represent their experience via online websites that demonstrate their knowledge, skills, and abilities. The contest is broadcast via the newsletter, website, and social media and through ITE's student chapters.

The first aspect of the contest is the submission and winner selection: Students submit just the URL to their ePortfolio and judges from the TAC, TRB committees, and partner organizations select winners based on the criteria that focus on both TSMO and the ability to present oneself creatively. Winners are supported to attend the TRB annual meeting.

The second aspect of the contest is the TRB annual meeting itself, where the winners engage in the TRB Careers in Motion Fair, meet with TSMO industry leaders, interact with practitioners at the TRB booth and meet with the board and TAC members about potential careers in TSMO. Students are then asked to write newsletter articles about their experience with TSMO, the contest, and TRB and become, in effect, student champions of TSMO on their campuses and into their careers.

3.2.4.2 *Transportation Technology Tournament*

The Transportation Technology Tournament is held in collaboration with the ITS Joint Program Office's Professional Capacity Building program. Building off their research with universities, the PCB program identified teamwork, real-world problem solving, and communications skills as major gaps in what students bring to the transportation workforce. The tournament was developed with NOCoE to highlight the need for these skills and to encourage students to focus on how to apply their knowledge to real-world transportation challenges. The tournament's goals mirror those of the workforce effort which are attempting to drive the conversation about the need for TSMO training at both the pre and post-employment stages.

The tournament asks university and college students to assemble teams and work with a local or state agency to define a problem or challenge in their region. After submitting an initial contest application to identify the team and the problem or challenge, students will work with academic advisors to learn about potential ITS and TSMO solutions via online training programs from ITS JPO, CITE, and other online courses. Teams will then utilize their experience, education, and new coursework to develop a solution or suite of solutions to address the originally defined problem directly. Students will submit their solutions via a proposal when judges will narrow the field down to a selection of finalist teams. These finalists will then be asked to give a live presentation in front of a panel of judges made up of leaders in the ITS and TSMO community.

In its inaugural year, the tournament was held at the ITE 2018 Annual Meeting and successfully started a conversation within TSMO and the entire industry about the value of students working

with agencies around real-world challenges. Several teams were even engaged by agencies to evaluate further deploying their solution.

The tournament will kick-off in the fall of 2018 with the target for the final event again taking place at ITE's Annual Meeting in July of 2019.

3.2.5 External Outreach

Through regular interactions with partners and at industry events, NOCoE has the opportunity to participate in and provide support for a variety technical-themed TSMO events, outside of the traditional peer exchange paradigm. Examples of this could include participation and marketing opportunities at founding partner association annual meetings, committee, regional and chapter meetings and industry events. NOCoE staff will carefully weigh these opportunities as they arise and make targeted efforts to engage the constituencies surrounding these events to increase NOCoE's visibility and perceived role in specific technical areas.

3.2.5.1 National Traffic Incident Response Awareness Week

The National Traffic Incident Response Awareness Week is an FHWA effort to encourage states and local agencies to focus on the importance of TIM, the life-risking work done by our responders and roadway workers, and to make the traveling public aware of their behaviors to increase the safety of the roadway. In 2018, National Traffic Incident Response Awareness Week will be held on November 11 – 17.

NOCoE participates in this effort by coordinating with FHWA and their contractors on the outreach effort, including providing toolkits, resources, and examples of activities that can be done during this week. Utilizing the website, newsletter, and social media, NOCoE reaches out to states and local agencies about potential activities, highlights the plans of other states, and discusses the need to participate in this national dialogue.

During the week itself, NOCoE highlights the activities of state and local agencies, draws attention to the conversations being had around responder safety, roadway safety, and driver behavior, and coordinates with AASHTO on potential larger communications initiatives.

3.2.6 National TSMO Award

Lane and bridge openings, ribbon cuttings, and media events bring prestige to the transportation agencies who built them and the politicians responsible for funding. These events are a celebration, a justification and a reminder that tax dollars are being spent wisely. The purpose of NOCoE award is to publicly celebrate efficiencies and TSMO solutions. The recognition will be awarded based on TSMO projects saving lives, time, money or some combination.

NOCoE launched the TSMO Awards in the summer of 2018 to highlight the successes of the TSMO industry and focus on specific TSMO activities at the state and local level. These awards will celebrate the use of TSMO, encourage its expansion throughout the United States, and in line with our mission, we will also share your impactful and creative solutions with the

industry. The NOCoE TSMO Awards are open to any city, county, MPO (RPO, COG), state DOT or private sector organization.

A panel of TSMO expert judges will select winners in the four primary categories described below. They will then choose one overall winning submission from among the category winners.

Judges will also select an individual to be honored as the TSMO Champion of the Year, chosen for his or her work in advancing the TSMO cause and changing the way people think about transportation.

The TSMO Awards are broken into four categories:

Major incident or special event planning and response – This award will recognize an agency or organization’s response to a specific incident special event utilizing TSMO and should detail interagency cooperation in planning and response as well as any measures of effectiveness on safety, travel time reliability, and congestion.

Improving your agency’s TSMO capabilities – This award will recognize an agency or organization that successfully integrates CMM/CMF into its organizational structure and the TSMO benefits that came out of it. This should include how the capabilities in each of the CMM/CMF dimensions have been improved through the use of the agency or organization self-assessments and implementation of follow-on action plans.

Best TSMO project (creative solution) – This award will recognize a successful “on the ground project,” e.g., ATM, SPaT corridor, V2I pilot, ICM, or other improvements with consideration of safety, congestion and travel time reliability improvements resulting from the TSMO project, compared to a traditional capacity-based approach.

Public Communications – This award will recognize an agency for use of communications strategies, tactics, and tools to inform the public of specific TSMO solutions and their benefits. Submissions should demonstrate public awareness generated by the communications activities.

From the winners of each category a NOCoE TSMO Overall Winner will be chosen and additionally, and TSMO Champion will be selected to recognize an individual for their contributions to advancing the practice of TSMO and changing the way people and organizations think about transportation.

Each selected winner (the person applying or their designated surrogate) and a guest will receive a round-trip airplane ticket to the 2019 Transportation Research Board (TRB) Annual Meeting.

During a panel session at the TRB Annual Meeting, each winner will be allowed 15-minutes to present their project to attendees and then participate in a moderated TSMO panel.

Winners will be honored with an award presentation during an after-hour awards reception. During this ceremony, the overall winner will be announced and presented with the overall NOCoE TSMO Award Trophy.

Each of the four category winners will receive recognition through media announcements, NOCoE's social channels, and bi-weekly newsletter, as well as on the NOCoE website where their case studies will be published and shared as leading examples of TSMO.

The TSMO Champion, (selected by the judges) will also receive round-trip airfare for themselves and a guest. He or she will also be presented with the NOCoE TSMO Champion Trophy during the after-hours award reception and will also be recognized in NOCoE communications channels.

3.3 Initiative-based Services and Products

Initiative-based Technical Services are one-time initiatives, which if decided to be in the interest of NOCoE and the TSMO community, can be undertaken with appropriate resources identified. Each service/initiative is a stand-alone item and is separate from the ongoing NOCoE operating budget because of the nature of the service. In business plan 2018-2019 the following two categories are identified as Initiative-based Technical Services:

- Focused Topic Initiatives (Marketing Plan)
- 1st and 2nd TSMO Summit Follow-Up Activities

These technical services have a specific scope, outcomes, budget, and time-frames. The specific task under each service is implemented through a hired consultant for the project. NOCoE will play the role of administrator for the contract, in addition to bringing the collective interests of the TSMO community together as the lead entity.

3.3.1 Marketing Plan

This marketing plan is designed to establish NOCoE as a *recognized leader in providing exceptional services to the TSMO industry* (taken from the Vision Statement) and "... empower the TSMO community to succeed by enhancing knowledge, skills, and abilities" (from the Mission Statement).

The plan details the campaigns, strategies, tactics, timelines, and metrics we will use to successfully market NOCoE itself, its resources for the TSMO industry, and the advancement of TSMO within transportation. It aligns multiple, simultaneous marketing initiatives with day-to-day operations and, most importantly, NOCoE's established strategic goals, while also taking into account the changing political, technological, and leadership landscape within the transportation industry.

In developing this plan, it was first asked, *what is the center selling? The short answer: **NOCoE is the only place that provides curated resources that are essential for TSMO.*** To be more specific,

NOCoE provides curated resources including tools, experts, gatherings and lessons learned that are essential to the successful application and advancement of TSMO. This answer was primarily defined by the value proposition already identified by NOCoE board members and combined with feedback from interviews conducted for the development of this marketing plan.

With that knowledge in hand, four overarching marketing campaigns were established which are highlighted below, which will be supported by all of the strategies and tactics listed in this document. Two campaigns focus on NOCoE's customers/constituents, and two are designed to empower the TSMO community. These campaigns are:

Customer Oriented Campaigns

- **Expand NOCoE Use Among Existing TSMO Participants**
 - o Working with our current base of TSMO practitioners, we need to deepen and engrain the NOCoE relationship with our base practitioner peers. (Includes participating state DOT's)
- **Increase Awareness and Outreach to New Audiences**
 - o Identify and reach out to key new audiences; MPOs, local agencies, planners, transit and freight (Includes non-participating state DOT's)

Empowering the TSMO Community

- **Create TSMO Workforce Development**
 - o Establish NOCoE as the hub of the transportation industry workforce development efforts and brand growth and improvements as TSMO workforce developments through enhanced partnerships and leading the industry's efforts.

The three marketing campaigns are designed to enhance established NOCoE initiatives with the growing day-to-day operations of the organization.

Every strategy that supports these campaigns must accomplish one or more of the following (derived from NOCoE's four strategic goals):

- **Grow recognition for NOCoE and educate core audiences on TSMO's benefits.**
 - o Strategic Goal # 3 - Bring together the TSMO Community
- **Provide current and potential constituents with an awareness of NOCoE's products and services, that for the first time in TSMO, the center has organized relevant, actionable information under one umbrella.**
 - o Strategic Goal # 4 – Increase awareness and understanding of NOCoE
- **Educate and demonstrate to current and potential constituents that they are already practicing TSMO in their daily work.**
 - o Strategic goal # 2 – Accelerate the deployment of techniques and emerging technologies

- **Articulate and demonstrate the efficiency, safety, organizational, and financial benefits of TSMO.**
 - Strategic Goal #1 - Educate, train and develop transportation agency officials and other TSM&O practitioners by offering reliable, timely information and professional development opportunities

Instead of a large singular event to increase visibility, this plan utilizes a steady drumbeat of consistent messaging combined with real practitioner value to move NOCoE steadily toward our strategic goals.

Further details for the marketing plan can be [found here](#).

3.3.2 TSMO Workforce Development Summit Follow Up

The 2016 Summit, held just before the start of the 2016-2017 Business Plan, covered the topic of TSMO Workforce Development and included a strong emphasis on engaging public agencies and educational institutions to identify opportunities for the development of hiring and training strategies conducive to skill sets relevant to the TSMO community. Several webinars were planned before the Summit to promote the event and disseminate relevant information, as well as to generate topics and ideas for discussion.

In addition to the NOCoE efforts, FHWA awarded a grant to the National Network for the Transportation Workforce for the [National Transportation Career Pathways Initiative](#). y, NOCoE has been and will continue to work closely with the five workforce centers across the country including the Southeast Transportation Workforce Center that focuses on Operations, women in transportation, military and veteran transition and freight. The goal of the career pathway demonstration is to engage students in the post-secondary educational continuum to choose transportation career pathways. NOCoE staff and volunteers, including members of the TAC, have participated in the information collection and stakeholder engagement portions of the Career Pathways Initiative.

After the completion of the 1st National TSMO Summit, an implementation plan was created to allow for collaboration with specific partners and to move the efforts needed to be forwarded. An NCHRP 20-7 project was selected, and the project will focus on developing model position descriptions, Knowledge, Skills, and Abilities descriptions, recruitment, career development, and retention. The eight priority action items from the implementation and their current status are presented in the table below:

#	Project	Description
1.	Academic Forum (Completed)	Convene a forum of DOTs, the private sector, and educators to discuss pre-employment education needs/solutions
2.	National Career	Create a repository of existing TSMO-related course materials across all educational institutions –universities and community colleges

	Pathways Initiative	
3.	NCHRP 20-7	Conduct an updated systematic exploration of knowledge, skills, and abilities (KSA) needs vs. training materials gaps for TSMO entity-related functions and positions
4.	NCHRP 20-7	Develop a repository of existing position descriptions (PD) for similar positions/functions, and create model position descriptions
5.	NCHRP 20-7	Develop model TSMO training program for new hires, promotions, and transfers -- including a review of current best practice for organization policies, practices, and content
6	Marketing Plan and 2018 Summit	Develop a strategy to elevate TSMO visibility as a core transportation function
7.	NCHRP 20-7	Document current best recruitment practice in public and private entities, including targeting of non-traditional disciplines and recruitment sources, and the use of recruitment “sweeteners.”
8.	NCHRP 20-7/ National Career Pathways Initiative	Document current best practices in mentoring, succession planning, cross-training, special assignments and individual career planning for public and private entities

NCHRP 20-7 Project

NOCoe will begin to prepare marketing, outreach and knowledge transfer activities for the expected completion of the NCHRP project next year. With updates to the workforce webpage and opportunities to engage TSMO stakeholders, activities will be integrated into the overall workflow of the NOCoE team.

Workforce Development & Training Resource Database

This database is being provided by the NCHRP 20-7 project and is the Task 2 Interim Deliverable. Permission has been granted by TRB and the project team to publish the database in its current form with credit and disclaimers provided to let practitioners know that the project team may choose to modify or update it. The sophistication of presenting the tool is in two levels; The 1st level tool will be an organized list of training opportunities provided on the NOCoE workforce pages will contain at a minimum, the category, description, and link to the training. Expected completion is December 2018. The 2nd level tool will be an interactive tool that will allow for the entire database to be accessed and filtered based on the user’s needs. Expected completion is 1st half of 2019.

Pre-Employment Education Forum

In addition to the NCHRP project, a more focused group was convened for a workshop to specifically address pre-employment education for future TSMO practitioners in the University (undergraduate and graduate) and the community college academic institutions. Work is also concurrently being advanced in the post-hiring professional training area through the development of best practices for TSMO training (will be conducted through FHWA) and also beginning to engage partners on developing a repository of training programs which will build off of current work already completed. The list of the seven priority action items are listed below, **(Non-Curriculum Support)** Identify state and local DOT/university collaboration models related to TSMO and create a best practice document, including case studies. Outreach to universities and DOTs on the collaboration model examples.

1. **(Non-Curriculum Support)** Create Community College TSMO technical training programs modeled after the Mobility Analyst Training Program for community colleges. Develop a partnership with community colleges to incorporate training for TSMO technicians and operators in conjunction with industry certification providers.
2. **(Outreach Promotion)** Explore and encourage the role of real-world, “outside classroom learning” for TSMO through an integrated hub at the university for professors, students, and industry to collaborate as a part of internships.
3. **(Curriculum Support)** Identify and reach out to non-civil engineering disciplines (computer, science, planning, public policy, IT, etc.) and propose guest lectures relating given discipline to TSMO as a career option.
4. **(Outreach Promotion)** Create a NOCoE student fellowship that will allow a recent graduate to work with NOCoE and partners for a set period (assume one year) to gain broad TSMO industry background.
5. **(Curriculum Support)** Contribute to TSMO curriculum development from practitioner/employer point-of-view and champion utilization.
6. **(Curriculum Support)** Analyze issues behind the lack of university course TSMO (and related new technology) content.

The 1st priority item was to identify DOT and academic collaboration models related to TSMO. This effort has begun with Iowa DOT and Iowa State University and Michigan DOT and Washtenaw Community College. The models will be presented in a case study format, and after the first pilot models are defined, additional collaborations will be contacted.

The case studies will be drafted and written by students selected by the DOT and University/Community College, which they will follow interview and writing instructions with guidance from NOCoE staff. The goal is to complete four-six DOT/University or Community College collaboration case studies by the end of FY19.

The work for the other priority items will begin after the first case collaboration model case study is near completion. Additional resources may be brought on to accelerate the delivery of the action items.

Workforce Resource Webpages

The NOCoE will create and maintain an organized set of webpages to provide information, resources, tools, and links to assist TSMO practitioners in finding workforce development information for individuals and their team members. The webpages will be sourced from partner information that will allow for TSMO practitioners to quickly sort through the multitude of information sources available for workforce development. The webpage is expected to be launched in September 2018.

3.3.3 Leading the TSMO Vision Summit Follow Up

The summit conducted in on July 23, 2018, “Institutionalization of TSMO,” was planned and executed within the 2017-2018 Business Plan cycle.

(This document will be amended with the summit proceedings and actions plan items in the next draft.)

4 Performance Metrics

NOCoE staff have been able to collect, consider, and evaluate available data from a variety of tools used to execute the services outlined in this plan. In consideration of the strategic goals as well as the desire to focus on metrics to positively drive change, the following metrics are organized into three categories, 1) Strategic Organization Metric, 2) Improving Internal Operations and 3) Increasing value of services.

1. Strategic metrics
 - # of people reached
 - i. Data sources: Technical service attendees, communications reach, and speaking events
 - # of interactions with NOCoE per person
 - i. Data Sources: amount individual users/states interact with the Center
2. Improving internal operations
 - Map out the activity of service and identify potential data points for evaluating operation efficiency (Measure, track, and refine).
 - i. Webinars
 - ii. Peer exchanges
 - iii. Case study development
 - iv. Newsletter
3. Increasing value of services
 - User profiles

- i. Identify who are our typical and extreme users and what resources they need and how they access resources/services
- Website and resource file accessed
 - i. Number of pages visited
 - ii. Number of files downloaded
 - iii. How many people going to external partner sites? And where?

With these metrics, the NOCoE staff will begin to plan, automate and track the metrics. The planning and automation of the metrics will be completed by December 2018 and metrics will start to be compiled and evaluated on a regular basis starting January 2019.

A difficult but qualitative measure for NOCoE's impact. NOCoE will start to collect and disseminate follow-up stories with practitioners who directly interact with a service or product. Through after-action reviews, identification of short to medium activities and continuous contact with the practitioners, NOCoE staff will identify potential stories that highlight the contributions of working with NOCoE. The intent is to maintain contact with practitioners and follow-up on their efforts to advance TSMO. Assuming their success and lessons learned, the NOCoE stories will provide a qualitative measure of how much of an impact the NOCoE has on the industry. A couple of potential stories have been identified and will be explored further.