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DEVELOPMENT OF A TECHNOLOGY TRANSFER PLAN FOR STATE DEPARTMENTS OF TRANSPORTATION RESEARCH PROGRAMS

HOW-TO GUIDE FOR CREATING PROJECT-FOCUSED VIDEOS

Prepared for:

National Cooperative Highway Research Program,
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of
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Development of a Technology Transfer Plan for State Departments of Transportation Research Programs

NCHRP 20-44(28) Task 3 Deliverable—
How-To Guide for Creating Project-Focused Videos

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INTRODUCTION

Video can be a powerful storytelling tool, allowing viewers an inside look at a topic while making difficult-to-visualize concepts immediately clear. Videos featuring transportation research projects can give agencies the opportunity to share the value and potential application of research results in a highly engaging manner.

This guide has been developed to help transportation agencies create compelling videos that maximize the potential of this technology transfer tool. It details a low-cost approach to creating videos that has proven effective with multiple state departments of transportation (DOTs). This approach requires some experience in video recording, video editing and voice-over recording; these are skills that often may be found within an agency or which may be outsourced. Technical guidance (for example, how to use video recording or editing software) is beyond the scope of this guide.

Other approaches to creating videos are possible as well, but incorporating high production-value features—such as animations and field interviews—would raise the cost considerably. The process described here, once established by a transportation agency, might require a total of 50 to 75 hours of staff and consultant time per video.

An example video created by Michigan DOT is used throughout this guide as an illustration of the points covered:

> *Research Spotlight: Remote-controlled vessels for bridge inspections*
> https://youtu.be/bJnrMVSzKqs

Stages of Video Production

There are four main stages of video production:

1. **Planning and pre-production** includes all of the selection, planning and coordination efforts needed to develop the necessary components of the video.

2. **Production** involves creating the on-camera interviews, compiling collateral video footage and still images, and creating a storyboard needed to create the video.

3. **Editing and post-production** involves assembling the various audio and visual materials to create and finalize the video.

4. **Publishing** is the final stage, where the produced video is shared with internal and external audiences.

PLANNING AND PRE-PRODUCTION

Select a Featured Project

Any type of project can inspire a great video. When deciding which project to choose, an agency should consider:

- Whether the project can be easily explained in three to five minutes.

- If imagery exists or can be gathered to supply visual interest.

- Who the anticipated primary audiences (practitioners, managers, and executives at state DOTs and other agencies) and secondary audiences (decision-makers and lawmakers; members of the public) will be.

By addressing these issues early on, an agency will be better positioned to develop a video that capitalizes on the project's visual potential and reaches its intended audience. Note that in some cases it might make sense to feature two or more related research projects in the same video.

Identify the Core Objective and Message

Like any story, the video should describe a challenge, introduce main characters, explain the efforts to address the challenge, and communicate the benefits. The video should answer a few basic questions:

- *Who* is or will be affected by this research?

- *What* is the challenge that is being addressed and what was learned from the research?

- *Where* did the research take place and where will the results be implemented?

- *Why* was this research needed, why is it important, and why now?

- *When* did the research take place and when will the results take effect?

- *How* did the researchers conduct their work and how will the findings be used?

Unlike traditional storytelling, however, a script is not written in the pre-production phase. It is typically written after conducting on-screen or off-screen interviews with practitioners, managers, or experts. See "Create a Storyboard" in the next section of this guide.

PRODUCTION

Conduct Video Interviews

By interviewing the individuals most familiar with the project, viewers will get to hear from those who know the topic best. Limit the on-camera interviews to just one or two people—such as the project manager or investigator—to reduce the number of people depicted in the video and avoid confusion. Interview times can vary, but plan to schedule each for 90 minutes. Additional considerations are presented below.

Set up
In addition to the interview subject, the video will require someone on-site to set up the camera and ensure good lighting and audio. A third person can ask the interview questions on-site, remotely over the phone, or even virtually with a computer.

Location

When interviewing, consider that experts are often most comfortable in their own environment. For some, that could be their office or on location in the field. Both indoor and outdoor interviews have benefits and drawbacks, and it's important to consider the options and prepare in advance.

Lighting

Natural sunlight can be great for an outdoor interview, but it can also result in distracting shadows from microphones or other equipment. If indoors, make sure any windows or light sources are behind the camera to illuminate the expert being interviewed.

Sound

When interviewing outdoors, be aware of wind, birds, traffic, and other sounds that can be more apparent on a recording and decrease the quality of the audio. Consider having the interview subject use a microphone. Schedule enough time for recording retakes in the event of unexpected noise. If indoors, be aware that interviewing in an empty room can result in echoes and turn off or mute all unnecessary devices to limit sounds. Indoor sounds, such as the hum of lab equipment, can also decrease the audio quality.

Filming

Interviews can be recorded with just a cellphone camera. Use a tripod or other stand to minimize shaking, which can be distracting for the viewer.

Additional considerations

Position the camera so that it records video horizontally. Frame the person being interviewed so that their face is slightly high and off-center. This will allow sufficient space to add their name and title during production. Suggest the interview subject remove any identification badges or distracting jewelry.

Share Raw Interview Video Files

Create a shared folder in the agency's preferred file-sharing platform and give access to the video producer and anyone else who will need it. Add the raw interview files here, as well as any other logos, videos, and photos that will be needed for the project.

Transcribe the Interviews

Before too much time has passed, view the recorded interview again. Type out what the person being interviewed said, noting the time stamp on the recording periodically. This will help when it comes time to finalize the storyboard and caption the video later.

Collect Supplemental Content

Photos and videos

The research team may be able to provide additional photos or videos that were taken throughout the project. Additional content may be found in other videos the agency has produced (such secondary footage to provide context is sometimes referred to as B-roll footage) and images on the agency's social media accounts and online.

Tips:

- ✓ Make sure the content is not copyright-protected or that the agency owns the copyright.

- ✓ Aim to use high-resolution, horizontal images whenever possible.

Introductory and closing slides

Create two images to bookend the video and provide the title and agency's logo and any other branding that should be used. (These are sometimes called the title card and end card.) For best results, these images should be shown on screen for five seconds at the beginning and end of the final video. These might be similar to an opening slide of a PowerPoint slide deck. A sample title card is shown in Figure 1.

Figure 1. Sample title card

Create a Storyboard

A storyboard is a shot-by-shot "map" for the entire video. It shows what on-screen content is paired with what audio for each shot of the video, and it keeps track of the total planned running time of the video. Figure 2 illustrates the first page of a sample storyboard.

To create the storyboard, start with the introductory slide and pair video (still images, field video, interview video, and on-screen text and graphics) with audio (narration text, comments from the interview subject, and audio from field video) with estimated durations for each shot and ending closing slide. Include directions for the video producer, such as adding fades between a series of still images.

Continue in this fashion to map out the entire video.

Shot #	Video Notes: • Text that appears onscreen is shown in **bold** • Videos and images retain the names provided by MDOT for clarity	Audio	Shot Length	Running Length
1	Title Card: **Research Spotlight:** **Remote-Controlled Vessels for Bridge Inspection Save Time and Reduce Risk** Michigan DOT logo **michigan.gov/dot** **Office of Research Administration** **Michigan Department of Transportation** Background image: video still, black and white – either Intro.jpg or first frame of IMG_0104.MOV	https://soundcloud.com/royalty-free-music-sdc/happy-upbeat-background-downloadsee-description-royalty-free-music-business-motivation-upbeat?in=royalty-free-music-sdc/sets/royalty-free-music-top-10-1 (fade to background during narration).	0:05	0:05
2	Video still fades to full color and begins to play. IMG_0104.MOV (0:01-0:09)	Narrator: This little boat is changing the way the Michigan Department of Transportation conducts bridge inspections.	0:08	0:13
3	IMG_0104.MOV (0:23-0:33)	Narrator: Equipped with sonar and other high-tech modifications, the Emergency Integrated Lifesaving Lanyard, or EMILY, can help engineers more safely and easily inspect the parts of the bridge that can't be seen.	0:10	0:23

Figure 2. Sample storyboard

Adding Video to the Storyboard

The interview footage and supplementary photos and videos will constitute the bulk of the video used in the storyboard. Video may be enhanced with on-screen text and graphics. The interview subject's name and job title might be examples of added on-screen text, as shown in Figure 3.

Figure 3. Screen with added video graphics

Adding Audio to the Storyboard: The Script

The audio column of the storyboard can be thought of as the video script. The script includes all narration for the video, whether provided by the interview subject or a voice-over narrator. The transcribed interview will typically be the main source of content for the script. However, some introductory content, framing language and transition language may be necessary. This can be added to the script as voice-over audio.

Tip:

✓ The interview subject's audio may be used when that person is on-screen (such as in Figure 3 above); it may also be used while other imagery is shown.

Record Audio

Choose a narrator

A narrator could be a staff member or other professional who will read the role's designated lines according to the finalized script. The narrator will need access to a microphone, which could be stand-alone equipment or even a high-quality smartphone.

Tip:

✓ The agency's communications office may be able to provide guidance on securing a narrator.

Record narration

Once the script has been reviewed and approved by the appropriate agency stakeholders, the narrator should read each of their lines clearly and directly into a microphone, re-recording as necessary and saving the recording as a single audio file.

Upload final files

Add the final version of the script and narration file to the shared folder.

EDITING AND POST-PRODUCTION

The video producer will use the final products in the shared folder to align the individual visual and audio elements to create the final video according to the final storyboard. Shot lengths may need to be adjusted based on the actual time required to play audio narration.

As part of this process, the producer should also:

Add Speaker Description

When the interview subject first appears on screen, a banner should appear to give their name and role so that viewers know who they are and their relevance to the project.

Add Background Music

A simple audio track adds a professional touch to any video. This can be selected and purchased from a variety of online retailers at minimal cost.

Create Captions

Using the script, create a new document the producer can use to add captions to every frame of the video to improve accessibility.

Finalize Two Versions

The producer should create two versions of the final video, one with captions and one without, both in 1920 x 1080 resolution or 16:9 aspect ratio. The captioned video can be useful at conferences or when played without sound. The uncaptioned video is great for viewing online.

PUBLISHING AND SHARING

Share the video with your agency's communications office to upload to the agency's official YouTube channel or other publishing platform like Vimeo.

Include a paragraph-long description to give viewers an overview of what the video is about. If using YouTube, consider these additional recommendations:

- During the upload process, add a thumbnail image to serve as a representative image of the video.

- Remove the option for public comment.

- Allow the option for the video to be shared.

Once the video is posted to the agency's official account it can be linked and shared in a variety of additional locations.

BEST PRACTICES

Consider the following additional recommendations that have been developed over time:

- ✓ Do keep the video brief. Aim for a final product that's between three and five minutes—it should be short enough to hold viewers' attention but long enough to include all of the important details of the project.

- ✓ Do be conscientious of any sights, sounds, or shadows during recording that could distract viewers from the person being interviewed.

- ✓ Do add humor to the video when appropriate. This can provide levity to an otherwise technical topic.

- ✓ Do work with your agency's communications office. There may be requirements related to visual branding, word choice or publishing that are better addressed early in the process.

- **X** Don't prepare the interview subject too much by providing in advance the exact questions that will be asked. The interview will sound much better if the expert is responding naturally to the questions as they're being asked.

- **X** Don't be afraid to ask clarifying questions or ask the person being interviewed to repeat something—once the interview is over it becomes much more difficult to more audio.

- **X** Don't use a virtual background if interviewing via Zoom or other virtual meeting platform.