

Inquiry sent to AASHTO SCOTE group on November, 4, 2015:

The South Dakota DOT is looking at purchasing cameras to perform turning movement counts at intersections, as well as collect other vehicle count data. We have gotten approval to amend the fiscal year 2016 capital asset budgets in each Region to accommodate this purchase, but are now tasked with determining how to go about purchasing the systems. From what we have found so far, Miovision is the only system that has all the capabilities, primarily on the video format and processing end, that we want. We would like a system that could be manually processed in-house or sent to an outside source for processing. Miovision has processing hours that can be purchased and they will do that for you, but I also know that video from the Miovision systems can be sent to other vendors for processing, such as countingcars.com. For this reason, we are looking at submitting a sole source justification to purchase the Miovision Scout system. In lieu of that, we would have to come up with specifications for an RFP to be put out to bid.

- *Could any other states that have purchased the Miovision system share how they did so (sole source vs. RFP) and any specifications they have for the system?*
 - *The Miovision representative we have been in contact with has said that California, Florida, Illinois, Missouri, Montana, Nebraska, New York, and North Dakota are using the Scout system.*
- *Does anyone know of any other vendors/camera systems that can be used for turning movement and other vehicle counts that can be processed by a variety methods as described above?*

Information received from responding states:

Alabama

Miovision is the only turnkey system they are aware of that provides the functionality we are looking for. However; if you have existing cameras (video detection for signals, CCTV, etc...), then there is a company in Atlanta that provides video/data analytics from your existing infrastructure: MetroTech.

Alaska

Alaska DOT/Highway Data uses Miovision cameras. Assume the Scout units and cameras were purchased as a sole source, given that no other vendor offered similar services at the time.

As of now, they use the video processing service offered by Miovision. A few times they have manually counted vehicles from watching the video captured by the Scout units. It is also possible to load video taken from a source other than the Scout units and have it processed through the Miovision website.

At the last NATMEC conference Jamar had a camera system but did not offer any video processing at the time. Do not know of another system that is available.

Arkansas

AHTD has not used or purchased Miovision. They have purchased a unit that can do automated counts called GridSmart. It is mounted on one of their mobile PTZ trailers. These counts are used for signal timing purposes only.

Delaware

Has no information on cameras for turning movement counts.

Florida

The Florida Department of Transportation is currently conducting a pilot study using existing ITS-deployed cameras to count vehicles. They will be utilizing technologies by a company, MetroTech, instrumenting cameras with video analytics to do same.

The first deployment of 16 cameras will be in Tampa, Florida (FDOT District Seven). They plan to deploy approximately 100 cameras over the next year with video analytics for study in the Tampa Bay Area for both freeway and arterial segments of highways.

Idaho

Sole source for Miovision. They shared sole source request letter and a letter written to the department. There were no other vendors who could process the files electronically when the original Miovision units were purchased, and they process the data quicker and more accurately.

See pages 8 through 10 for attachments.

Illinois

Illinois DOT has an Office of Planning and Programming that handles overall statewide traffic data collection (speeds, ADT, truck counts, etc.). They have been able to purchase Miovision systems for each of their 9 district offices. If want to know what type of funding or procurement method was used, can get you in contact with our Office of Planning and Programming.

Indiana

INDOT used the sole source, special procurement approach, using SPR funds from our Traffic Counting Program.

There are multiple video traffic counting vendors who can use modified digital cameras or fixed camera installations, but at the time they purchased Miovision, no vendor had automated data processing besides Miovision, which is why they were able to use the sole source special procurement approach. Other vendors relied on recording the movements and someone reviewing the video at 2-3x the speed and manually recording the information in spreadsheets.

They did have a vendor who approached INDOT a year ago that indicated they had proprietary software that can take videos from ITS mounted video camera devices, modified portable video cameras (including Miovision), and fixed camera installations at intersections and convert them into traffic counts by vehicle length bins. They indicated that you pay a one-time fee and the software could be used or installed on one PC for unlimited usage. They've not heard back from this vendor and Miovision made it clear to us that digital output from their device is proprietary.

See pages 11 through 14 for attachments.

Kansas

There is another company that sells cameras and allows the end user to process the information in-house. That company is the Greater Traffic Company (<http://www.greatertraffic.com>) and the owner is Gary Carter. He sells a complete Portable Digital Video Recorder (PVDR) system. The system includes a camera, pole, bracket (to attach the pole to a street light, power pole, or other tall structure), and a DVR (digital video recorder). It does collect counts at night even with minimal light. He works alongside Jamar Inc. and will sell you their TDC-ULTRA manual counting board. The TDC-ULTRA has a video function that one can use in conjunction with the PVDR to manually count turning counts and classification studies. The whole system is under \$1500 and the TDC-ULTRA is about \$1000.

There is only one technician for the whole state of Kansas for their Traffic Engineering section, so this system has helped a lot for their larger cities (Wichita, Topeka, and Kansas City to name a few).

Before they purchased this system they did look at Miovision. Yes, Miovision does have a good system, as the City of Wichita uses their Scout cameras, but their budgets were (and still are) tight. Also, they do not allow the end-user to process their information in-house.

Kentucky

Has no experience with Miovision (or similar products/services) at the Cabinet-level. Believe some of their consultants utilize Miovision, but they have not directly.

Maine

Maine DOT uses Miovision Scout cameras; they bought them sole source as at the time when they bought them 3 years ago nobody else was doing this. They didn't use a spec, they just talked with their FHWA people at that time regarding what was out there for non-intrusive counting devices. They also have a stand-alone contract for processing of the data.

The only other entity they have tried that seems promising is the Aldis 360 gridsmart camera; it is not very portable, you would need to trailer mount it and they are very expensive.

Massachusetts

At MassDOT they do not own any video turn movement counting equipment. Miovision has tried to sell us the Scout video equipment but with staffing issues and the number of units needed to count the many large requests we receive it would not be feasible. Miovision has a partner, Precision Data Industries (PDI), that they use in Massachusetts to deploy the video camera units (VCU). PDI has approximately 75 units.

The MassDOT Traffic data folks say there are other camera systems available but Miovision has a proprietary system for data extraction. They are also aware that the Aldis Camera has the capability to do turn counts and classification, but this tends to be more of a permanent intersection vehicle detection camera with these other features than a portable system.

Michigan

When purchasing Miovision they used an RFP and the specification sheet was based on information provided on the Miovision website and staff performed evaluation of the unit. They then set up a 3 year contract for processing fees.

Only know of one other vendor for counting, which is "L2 Data Collection". The video unit has the camera mounted on top of the box instead of a pole mount and the video can be sent in for processing or counted in the office.

Minnesota

Minnesota DOT has primarily been using the Traffic Data, Inc. Counting Cars cameras.

MN DOT in the Metro Area has 7 video Cameras that they bought from CountingCars. Some of the insights & experiences with these video systems are below. Some of their video systems continue to change, so some of the newer products may be different.

They make a great deal of use of their video cameras, whether it is for a Turn Movement Count, Traffic Observation, Roundabout study, or Pedestrian Study, etc.

They process all their videos "in-house" with use of CountingCars COUNTpad and COUNTpro program. This set-up syncs the video time with the COUNTpad, thus a person can process the count along with the features of speed up the video, slow down the video, pause the video (break time), and save a partially processed video. CountingCars does give the option of processing your video for you.

- 1) Field set-up of the video camera is usually about 15 minutes.
- 2) Cameras are mounted to sign posts, light posts, or power poles via hose clamps.
- 3) Black & White cameras have a 90 degree field of vision. Color cameras have a 150 degree field of vision. Use both depending on the situation. The color cameras (wide angle) work well with large intersections or Roundabouts.
- 4) Power supplies will power for 3 days or 7 days, depending which Power Supply/DVR you purchase.
- 5) Files are written to an SD Memory Card. Files will be large in size, so you should have a large drive for office storage. Easy to transport to computer.

They originally did not use Miovision as their video recorder encoded the files so only Miovision could process the video files. And due to the various needs/requests of the information needed from the video, it was easier for use to process the videos in-house.

MNDOT also has one other district that uses the Counting Cars cameras a great deal and they prefer them to Miovision. They have tried both and said that they have had great success with the Counting Cars cameras. They also said they are significantly less expensive and allow them, or their consultant, to review the video on their own time frame at a much lower cost than having Miovision provide the cost. They said that they have recently upgraded to the newest version of the Counting Cars cameras.

So far believe that all MNDOT purchases have been sole source. Believe that the price has been low enough that they have been able to do the direct purchase.

Mississippi

Mississippi DOT contracts out our 12 hour TMCs so we have not needed to purchase any of these camera systems.

Missouri

Missouri has used sole source procurement for Miovision in the past and they just did so again this past summer. Miovision is the only vendor they can find that offers full service processing of the counts. They did have to advertise their intention to use a sole source before proceeding, and did not receive any objections from other vendors when they did so.

See pages 15 and 16 for attachment.

Montana

Montana Department of Transportation has purchased and is using the Miovision Scout system. A few different Bureaus use Miovision. In the Traffic Safety Bureau, they have four Scout units. They found that there are no comparable products to the Miovision system, so they purchased their last two cameras through a Sole Source Procurement Justification. They were specifically looking for a portable system that processed the counts and also could handle roundabouts easily.

Their Data and Statistics Bureau also uses Miovision quite extensively. They actually did go through the RFP process a few years back (think in 2012). They got two responses, one of which was Miovision. They could not consider the other system because it was not the portable system that they were looking for.

They are really pleased with Miovision. It has significantly helped them in collecting high quality data using less manpower.

See pages 17 through 19 for attachments.

Nevada

Nevada is not familiar with the Miovision system.

New Hampshire

New Hampshire has purchased six Miovision cameras and uses them exclusively for turning movement counts. They also use them for locations where we are interested in bike/ped data.

They did a bid process on purpose, expecting only one response, in 2010; Miovision was the only bid. They wrote specs not necessarily to get Miovision, but didn't know of anyone else with portable, self-contained power (not requiring hooking in to a signal controller). Aldis may have something at this point. The Miovision system has a giant battery pack. The standard unit, fully charged will, in theory, go 72 hours. They had varying degrees of success with this; weather, recharging schedules, etc. will affect it. It is good for 48 hours. They have had some battery issues, getting hot/expanding, face plate popped off during recharge. Overall has worked well for them.

Miovision let them have a demo unit, but they still paid for download time. It can do many things besides turning movement counts. It can do ATR counts as well. They purchased initially to replace a full time person. Will often use 48 hours at an intersection to get all legs for ADT on each leg.

They did purchase the hardware after determining that there were no other viable options. They also sole sourced the data processing through Miovision. They are very satisfied with the results, but have had some hiccups with justifying the initial contract and again at renewal time.

They had a guy go head to head with their count, also demo Wavetronix unit, and had a tube counter (not a lot of need for ATR now in New Hampshire). Had stunning success with the Miovision for turning movement counts.

They initially purchased three, but recommend doing an even number. For a large spread out intersection, you may need two cameras; especially for roundabouts. They liked them so much, they got three more, had plenty of project demand.

They have used Miovision for bike/ped counts, but they do charge more for the processing. There are different charges per hour of video for different count/classification. ATRs are by lane (\$). A la carte pricing to add bike/ped on to vehicle counts; roundabouts are a different charge – they will output into equivalent LT/TH/RT so can compare in Synchro. Miovision initially tried to get them to pre-purchase credits for the processing, but there were complaints because the pricing structure changed so many times. Also, they had to get them to agree to invoice the DOT for the credits after because they could not pay in advance for services not rendered. Initially, it was a three year contract, they just did a three year renewal. The company is based out of Canada, so turnaround time is three days for count processing and they have slightly different holidays than we do here. But they do still charge in US dollars.

It is automated processing, but Miovision does have a person doing manual spot checks, and they will tell you within 24 hours of submitting the video if there are solar issues that may affect the accuracy of the counts.

The durability of the Miovision system is great. They have had it in heat, cold, etc. Obviously snowing is not ideal, but the core of their count program is when snow is not around. Watch out if the camera is facing due east or west. They have never had the system stolen or otherwise vandalized, though once one of the cameras was turned away from the leg of the intersection. There is a ratchet strap, so you have to try hard to swipe it.

The link to their bid documentation is: <http://das.nh.gov/purchasing/specRFP.asp?rfpID=6385>
There is a "Download document here" link at the bottom of the page.

New Mexico

Currently, they have on-call consultants that use the Miovision system. They are happy with the capabilities of their system and speed of their data delivery. The Miovision representative has been there and demonstrated their product. They are interested in purchasing their camera and subscribe to their processing service. But they have not started the process yet. In their research, about two years ago, there were other vendors with similar capabilities.

New York

New York has tested the Miovision Scout at a location less than a mile from their office a couple of years ago. It worked well and thinks that the Long Island Office has also tested it. They likely do not have any long term usage of it so their experience is limited.

North Carolina

North Carolina does not purchase this equipment. They outsource the vast majority of the turning movement counts. All of their contractors are required to provide video when requested. Some do use Miovision, but believe most do not. They are starting to complete some studies of the quality of the Miovision work when compared to visual counts; their staff has had some questions. From discussion with

a few of the contractors, they often use the cameras to collect the video, and will manually count the site in the office. They are able to process the counts anywhere from 25 to 50 Percent faster than an onsite count.

North Dakota

NDDOT utilized the sole source purchase of Miovision equipment through their "Alternate Procurement Request" process.

They have 5 or 6 of the newer Scout Miovision units and 4 or 5 of the older Miovision units that they call the "classic pole." These older units are no longer made. This brings their total to ten units. About the only difference is that the newer "Scout" collapses down to about 4 ½ feet which makes them easier to fit in their vehicles than the older units at roughly 6 feet. They can be used with a pole mount that gets strapped to a street pole or there is a tripod that can be used, both extent up to 25 feet.

There is a SD card that gets mailed into Miovision to have processed; the cost differs depending on the study being done. They have been doing 24 hour or 48 hours turning lane studies. Do remember during the training session years ago a cost of \$250.00, but of course this changes with the study being done. Back then the cost for the Miovision was roughly \$5,000.00 apiece, not sure if this included both the monopod and the tripod.

They are not aware of any other vendors/camera systems for turning movement counts at this time.

Oklahoma

Oklahoma DOT utilizes Miovision for a portion of their traffic counts.

Oregon

Oregon DOT has used camera systems for manual counts for over a decade. Primarily, these have been camera systems purchased from manufacturers that designed them for some other purpose, then they had to create battery and installation systems to make them work. They have personnel in-house that watch the videos and tally the turning movement or classification data that is needed. They also have contractors in the area who have done the same type of thing. There are quite a few contractors who will make the videos, and/or process the count data from them.

They purchased a Miovision camera some years back and used the credits primarily for roundabout analyses. They know a number of vendors and jurisdictions who have gone for their systems. Their purchasing processes tend to be either for services or equipment. To use Miovision required creating a hybrid of both that was just a hassle they did not want to contend with at the time.

They also had a few tests of a software system from France called Logiroad which determined turning movements of vehicles as they went through the defined areas of the screen. The software has a high upfront cost, but once you have it there is no ongoing analysis cost like with Miovision. At this point they have not signed on with them either.

They just got two of the new minis from countingcars.com and will start trying them out next week. Their current set of cameras is failing, so they needed to find something to replace them. The mini is much lighter, so if it will work even for most situations that would be great.

Virginia

Their traffic data business model is to purchase a quality data product from contractors working on their behalf.

They do not own the equipment being used by the contractors. While they did not specify the type of equipment to be used for video data collection, their contractors responded to the RFP indicating they would use the Scout system to collect the data and Miovision for processing the data, so they are familiar with the Miovision product. They are not aware of other video equipment systems that have the same capability.

Wyoming

WYDOT has been using Miovision since late 2010. They used normal state funds to purchase them, which just required they write a simple sole source memo justifying them. At the time of the original purchase, Miovision was the only provider of such devices, so it was pretty straight forward. They started with 2 of the old classic VCUs at that time, and have since added 4 Scout units as well. With the Scouts they were able to go sole source with Miovision for compatibility with the previous units and analysis platform. They changed out the old VCU poles to the more compact Scout poles when they purchased their first two Scouts. In 2012 and 2013 they collected about half of their counts with Miovision and the other half manually with JAMAR count boards. In 2014 and 2015 they've collected nearly all of the counts with Miovision. They count roughly 100 intersections per year.

Right now they're having problems with Miovision's video processing platform and video uploading software. There is a glitch in their State's firewall system and their uploader program that has been blocking them from uploading video for processing since mid-September.

See page 20 for attachment.

Also made an inquiry with the city of Sioux Falls (in South Dakota) who we knew had the system:

City of Sioux Falls, SD

Sole source for Miovision originally; use Miovision to process peak hour counts and countingcars.com for 12 hour counts because of the cost for the Miovision processing.

SOLE SOURCE JUSTIFICATION

Requisition Item: ___Miovision "Scout" Video Data Collection System

1. Please describe the item and its function: Equipment calibration and on-site inspection for ECM system sites to include problem evaluation and debugging, data analysis and evaluation, plus follow up report and a list of recommendations to improve system performance and increase system operational life.

2. This is a sole source* because:

- sole source provider of a licensed or patented good or service
- sole provider of items that are compatible with existing equipment, inventory, systems, programs or services
- sole provider of goods and services for which the Department has established a standard**
- sole provider of factory-authorized warranty service
- sole provider of goods and services that will meet the specialized needs of the Department or perform the intended function (please detail below or in an attachment)
- the vendor/distributor is a holder of a used item that would represent good value and is advantageous to the Department (please attach information on market price survey, availability, etc.)
- sole manufacturer and distributor (attach Manufacturer's letter to this effect)
- this is a renewal of a sole source that has already been advertised (attach referenced PO and vendor quotes as applicable)

3. What necessary features does this vendor provide which are not available from other vendors?

Please be specific:

Miovision provides the software analysis capability to process video files and provide accurate reports and information. No other vendor does this using software. Some offer to manually count vehicles in video images -- but this introduces an unacceptable level of error. Miovision is the only company currently available with a complete video data collection and processing package. See attached document from Miovision.

4. What steps were taken to verify that these features are not available elsewhere?

- other brands/manufacturers were examined (please list phone numbers and names, and explain why these were not suitable).
- other vendors were contacted (please list phone numbers and names, and explain why these were not suitable).

*Sole Source: only one vendor possesses the unique and singularly available capability to meet the requirement of the solicitation.

**Procurements of items for which the Department has established a standard by designating a brand or manufacturer or by pre-approving via a testing shall be competitively bid if there is more than one vendor of the item.

Please answer each of the following in detail. You may use a separate sheet if necessary, referencing each question by number:

1. What is it about this purchase that makes it unique? (Patents/copyrights, need compatibility with existing—why? Space constraints, must match equipment with another agency or department, consequences if this were put out for bid, etc.

This sole source purchase is based on the fact that Miovision is the only vendor that can successfully count and classify vehicles based on video images. The equipment to collect the video is sold at a discounted cost.

2. What steps have you undertaken to determine that this is the only product or service that will meet your particular needs? (Professional opinions/correspondence, trade publications, trade shows, visits to, or correspondence with, other institutions that have installed the same product, site visitations, etc.

The processing of video data collected with the Miovision system can only be done by their processing unit. It is their software, algorithms and processing power that can accommodate the requirements necessary to process large video files. No other vendor offers this service.

3. Will this purchase tie us to a particular vendor for future purchases? (Either in terms of maintenance that only this vendor will be able to perform and/or if we purchase this item, will we then need more “like” items in the future to match this one?

Yes. The Miovision data collection equipment records video files that can only be processed by them. No other vendor performs this function.

4. Will this purchase tie us to a particular vendor for software and or software maintenance? (Do you need it to be renewable and for how long?

There are no software implications involved with this contract. All Miovision software is run by them to process video files.

5. Please affirmatively state, “No other vendor can provide the same or a similar product/service,” and enclose any other information which will help make the determination that this is a sole/single source procurement.

No other vendor can provide the same or a similar product/service. Miovision is the sole provider of the video data collection and processing services required to perform various studies.

Scott W. Fugit, Idaho Transportation Department
Roadway Data Section
P.O. Box 7129
Boise, Idaho 83707-1129

This letter is to confirm that the automated traffic count system provided by Miovision Technologies Inc. is a sole source product. Miovision Technologies, Inc. is the sole manufacturer and distributor of an Automated Turning Movement Count System used in the United States, Canada, United Kingdom, and Middle East. Miovision Technologies, Inc. is the sole manufacturer of software that will analyze recorded raw video from an intersection, roundabout, or mid-block location and provide a detailed, tabular report of vehicular counts and associated vehicle movements at such intersections. Miovision Technologies, Inc. is the sole manufacturer of the portable camera hardware, mounting equipment, and video collection unit necessary to record video at an intersection, roundabout, or mid-block location. No other manufacturer of cameras, software analysis, or video collection unit will work with the Miovision system. Miovision Technologies, Inc. is the sole provider of a web site that allows end users to view their uploaded video online through secure username and password and stores the video for future observation.

Miovision Technologies, Inc. video collection unit and analysis software uses specially developed algorithms and systems and is protected by U.S. patent 20080270569 (pending).

Miovision Technologies, Inc. is the sole provider and authorized source for repair of the video collection unit and camera.

If you desire additional information, [please don't hesitate to contact me](mailto:scott.fugit@idot.gov) at 519-513-2407 ext 206 at any time or visit our web site at <http://www.miovision.com>.

Manufacturing & Shipping facilities located at:

120 Otonabee Drive
Kitchener, Ontario, Canada
N2C 1L6

Sincerely,



Kurtis McBride
CEO
Miovision Technologies



SPECIAL PROCUREMENT

State Form 46909 (R8/9-07)
INDIANA DEPARTMENT OF TRANSPORTATION
Approved by State Board of Accounts, 2007

MEMORANDUM

TO: Jim Stark, Deputy Commissioner of Capital Program Management

FROM: Roy Nunnally, Division Director of Planning & Autumn Young, Traffic Count Section Supervisor

DATE: April 5, 2012

SUBJECT: Special Procurement Approval
FOR: MioVision Technologies, Video-Based Traffic Count Devices

Pursuant to 105 IAC 12-3-8, I, Michael B. Cline, Commissioner of the Department of Transportation, do hereby find and determine that the supplies and/or services referenced herein may be procured from Midwestern Software Solutions by a Special Procurement as follows:

- (1) there exists a unique opportunity to obtain supplies or services at a substantial savings to the Department
- (2) the market structure requires the department to inspect and bid on the supplies to be procured
- (3) for the procurement of data processing contracts or license agreements for:
software programs; or
supplies or services, when only one (1) source meets the Department's reasonable requirements
- (4) the compatibility of equipment, accessories, or replacement parts is a substantial consideration in the procurement and only one (1) source meets the using Department's reasonable requirements
- (5) Refer to EMERGENCY procedures**
- (6) the Department has solicited for a procurement under another method and has not received a responsive bid from a responsible bidder
- (7) Refer to EMERGENCY procedures**
- (8) for the evaluation of supplies or a system containing supplies to obtain functional information or comparative data or for any other purpose that in the judgement of the Commissioner may advance in the long term competitive position of the State.
- (9) for the procurement of copyrighted materials to be used, provided, or distributed by the department.

JUSTIFICATION:

INDOT has a need to collect Turning Movement Counts (TMC) at various intersections across the state as well as a growing need to collect traffic information on roundabouts intersections, bike and pedestrian facilities and crosswalks. At present, INDOT does not have the proper equipment to address these counting needs in an automated way. TMC, roundabouts, and bike/pedestrian counts are performed manually using field technicians, consultants, and for bike/pedestrian counts, volunteer special interest groups.

Manual counts are very labor intensive for both the collection and processing of data, requiring one or more staff per intersection or location to physically sit at the location and tally count information at an estimated total agency cost of \$20 hour (considering full fringe benefits). An internal survey shows that each INDOT district performs between 30 to 80 manual TMC annually. These counts are limited to 2-6 hour duration due to limited resources.

MioVision Technologies have been selected as the sole source provider of portable video count devices to overcome these challenges. Miovision automates TMC, roundabouts, and bike/pedestrian counting activities by collecting video at strategic locations around the roundabout with Video Collection Units and then processing recorded video through Traffic Data Online. Miovision uses an in-house algorithm estimation method to process measured movements from the recorded video to actual traffic statistics. Automating these activities will significantly reduce the amount of time and resources needed to collect data and produce reports and increase the accuracy of traffic studies. MioVision provide the following agency benefits:

- Reduces manual counting and data processing increasing staff productivity allowing 1-technician to perform TMC at up to 6- intersections simultaneously versus on 2-technicians collecting at 1-major intersection each day.
- Increase staff flexibility to expand the traffic data collection capabilities in terms of performing traditional traffic counts, increased TMC, roundabout counts, and intersection bike and pedestrian counts.
- Reduced consultant contract traffic counting needs
- Reduced human errors from manually collecting and processing traffic data
- Free field inspectors/technicians to assist with traditional district traffic counting needs which will reduce travel from central office to remote district areas.
- Allow counting activities during weekends, nights, and inclement weather conditions with no additional staff resources
- Allow TMC counts duration to increase to 8, 12, and even 24-hours per site for more refined decision making.
- Provide access to recorded videos of intersection movements to support engineering judgment and to validate data as needed.
- Provides vehicle classification information in turning and roundabout movements, which is often not collected using manual methods.

Initial Cost: \$315,000

- \$168,000 for 42-camera units (6-per district, and 6-for CO field technician staff for specialized count requests)
- \$116,000 for prepaid credits to process the traffic count data
- \$31,000 for accessories, battery packs, extra parts, straps, locks, and tripod stands

Annual Costs: \$126,000

- \$116,000 for prepaid credits to process the traffic count data
- \$10,000 for replacement parts as needed

Estimated Annual Agency Cost Savings: Up to \$270,000 annually

- Up to \$114,000 in data collection labor. Technicians will spend 20-40 minutes per site setting up and removing MioVision devices versus up to 6-8 hours performing manual counts
- Up to \$125,000 in consultant intersection balancing and TMC activities. We no longer need to have consultants perform this function any longer.
- Up to \$21,000 in not having to collect traffic counts at each leg of an intersection for intersection balancing.
- Up to \$10,000 savings in consultant leasing/work fees (leasing, shipping, overhead costs, hourly rates, and higher credit cost to process data using MioVision equipment) for specialized/emergency count requests.
- Other intangible costs
 - o Reduce overnight expenditures for Central Office Staff,
 - o Reduce fuel consumption
 - o Reduced safety conflicts and risks for field technicians,
 - o Instant access of data to multiple engineers
 - o Standard TMC reports
 - o Reduced need for Traffic Control
 - o Reduced need for consultant contracts for traditional counts
 - o Faster data turnaround times

CASE STUDY BENEFITS (N. Carolina, Consultants, and Illinois DOT)

- 60% increase in productivity based on doubled total working hours. Equipment allows for unlimited recordings during evening hours, weekends, and poor weather conditions.
- Count devices can be set up and removed at each site in roughly 20-minutes total. This will allow 1-technician to set up to 8 or more sites per day (depending on driving distance and available equipment) versus 1-site per day.
- Improved accuracy from 75-80% with manual counting to 95-98% with Miovision's automation. No need to worry about distractions, bathroom breaks, personal breaks, and other.
- Decrease study turnaround time by 60%, from 5 days to 2 days
- Consistent data formats agency wide.

The Traffic Statistics Section is requesting the approval of a total \$126,000 annually in SPR funds (\$116,000 for prepaid credits to process the traffic counts and up to \$10,000 for equipment replacement parts: batteries, straps, tripods, locking mechanism, chargers, and replacement cameras as needed) to continue use of MioVision equipment.

In 2012, INDOT purchased MioVision Technologies to automate turning movement counts, roundabout traffic data collection, and bike/pedestrian counting activities using a video based system. This technology replaces manual count activities in which 1-2 persons physically counted intersection turning movement counts for up to 6-hours per location. 42-devices were purchased whereas each district plus central office Logistical Support Center received 6-units. The technology requires proprietary services to reduce collected video data to usable traffic statistics. The technology is estimated to save INDOT roughly \$270K annually (labor costs and consultant fees) for routine turning movement counts activities. The Traffic Statistics Section is responsible for managing all data processing and equipment purchase needs for this technology.

INDOT SUCCESSES 2012-2013:

STATEWIDE IMPLEMENTATION - The technology is continuously being used by each district for TMC needs which primarily support signal timing changes and signal warrants program. Since 2012, INDOT have performed over 326 traffic studies using this equipment with 98% accuracy.

EFFICIENCY - LaPorte District (Bill Meeks) indicated this was the primary driver that allowed them to reduce the need for a field inspector thereby allowing the district options to re-deploy labor to other areas needed.

TIME & COST SAVINGS – INDOT saved a total of 2-weeks time and approximately \$7,150 for a large, special TMC request. In mid-Fall 2012, there was a need to collect turning movement count data at 10 intersections simultaneously to support a critical traffic model analysis study for the I-69 corridor. The INDOT Traffic Statistics Team was able to complete this with 4-INDOT Field Technicians within a week and able to get 24-hour TMC split into various modes (motorcycles, passenger cars, small trucks, & medium to large trucks). It took the technicians a total of 15-hours to setup, remove, upload, and process the data for all 10-locations. INDOT spent a total of \$6,060 (\$300 in labor costs = \$5,760 to process the data). Using the old manual method, INDOT would have to use up to 20- consultant technicians (roughly 2-persons per intersection) spending up to 9-hours each to collect the data during the peak hours 6-9 AM and 4-7 PM and off peak 11-2. We would then need to set up 40-traffic counters devices, which would have taken an additional 3-4-technicians to set these counts in a single day and another day to pick up and process the data. We would have then had to pay a consultant to take the TMC peak hour counts and the processed traffic count device data to balance the TMC for 24-hour counts. This request would have taken 3-weeks from start to finish. (20-consultant staffers * 9-hours* \$25 per hour = \$4,500 for TMC; 3-INDOT technician setting tube counts (40-count stations *\$120 per station = \$4,800); (10-intersections to be balanced, assuming 20-hours of consultant services * \$70 per hour) = \$1,400. Total costs \$10,700 for only 9-hour counts and no vehicle classification.

FLEXIBILITY – Late fall 2012, INDOT Traffic Statistics were asked to use the technology to capture pedestrian activities in Terre Haute on US 41 through the ISU Campus. The technology was used to determine crosswalk needs and other roadway enhancement.

IMPROVED CUSTOMER SERVICE – Spring of 2013, the Traffic Statistics Team were asked to collect TMC data at 5-location on SR 267 near I-65 to study traffic pattern along this stretch of the corridor as it relates to the Amazon.com distribution center needs. The 2-technicians were able to setup the devices in less than 3-hours and continue with other duties nearby. INDOT Engineers were able to get the data in less than 4-days.

STANDARDIZATION – Since all districts use the same equipment and processing methods, the data format is consistent throughout the state.

OTHER STATE DOT BENEFITS (N. Carolina, Consultants, and Illinois DOT)

- 60% increase in productivity based on doubled total working hours. Equipment allows for unlimited recordings during evening hours, weekends, and poor weather conditions.

- Count devices can be set up and removed at each site in roughly 20-minutes total. This will allow 1-technician to set up to 8 or more sites per day (depending on driving distance and available equipment) versus 1-site per day.
- Improved accuracy from 75-80% with manual counting to 95-98% with MioVision automation. No need to worry about distractions, bathroom breaks, personal breaks, and other.
- Decrease study turnaround time by 60%, from 5 days to 2 days
- Consistent data formats agency wide

SINGLE FEASIBLE SOURCE (SFS) APPROVAL REQUEST WORKSHEET

TO: General Services Specialist
Lori Tackett, Phone: (573) 522-9481

FROM: Traffic Management & Operations Engineer
Jon Nelson - Phone: 573-751-1157

RE: SFS Approval Request For Miovision Traffic Counting Equipment and Services

DATE: June 30, 2015

DESCRIPTION:

Please specify the exact product/service your agency needs: Traffic and Highway Safety is looking to establish a statewide contract from which district offices may acquire non-intrusive, portable video equipment that can sufficiently collect video data for processing traffic counts and turning movements at various intersection configurations throughout the state. In addition to the video equipment, the desired contract should also provide web based services to which the video data can be uploaded and from which automated reports can be generated for information including intersection traffic counts, turning movements, and vehicle classifications (passenger vehicles, small trucks, heavy commercial trucks, bicycles). Installation and operation of such equipment should be able to be completed by one person easily, in a short amount of time and without the assistance of specialized equipment.

Is this a one-time acquisition or an ongoing need to acquire this product/service? There is an ongoing need to acquire this product and, especially, the video processing services. District offices will determine each year how many traffic counts they need to complete and will, in turn, utilize the video equipment they've acquired to capture the video data needed to populate the web service and, ultimately, generate the desired reports.

If ongoing, please specify the period for which the SFS is being requested: The video equipment is less likely to be acquired from year to year. The web service hours, however, will be purchased regularly throughout the life of the equipment. It is anticipated that service hours would be purchased for at least the next three years.

Contractor name and FMS vendor code: Miovision

Estimated dollar amount of the SFS request: \$100,000-150,000 per year

JUSTIFICATION:

In the space provided below or on an attached page, please explain how the product/service described above satisfies one or more of the following SFS criteria (RSMo 34.044):

- a. Supplies are proprietary and only available from the manufacturer or a single distributor; or
- b. Based on past procurement experience, it is determined that only one distributor services the region in which the supplies are needed; or

- c. Supplies are available at a discount from a single distributor for a limited period of time.

(Approved By)

(Date)

Traffic and Highway Safety’s request for a single feasible source approval is based on a couple of factors. First and foremost, research and communication efforts of the division have yielded no evidence that any vendors other than Miovision can provide the desired product/services. MoDOT has been using Miovision for several years, and, to date, vendors who can offer comparable services have not been identified. Specifically, Miovision provides the unique service of not only providing sufficient equipment to collect the video data, but also allowing for that video data to be uploaded to a web service for analysis and report generation. This allows MoDOT staff to simply setup the camera(s), upload the collected video, and receive a final report from Miovision. Several vendors provide sufficient equipment for collecting the video data. In general, however, the equipment provided by these other vendors requires the data to be manually processed by a person after collection. This is not the case with Miovision. One other vendor, Aldis Inc., was previously identified as providing both the video collection equipment and a comparable software analysis tool called GridSmart. The video equipment for GridSmart, however, is a trailer-mounted system that is not easily and quickly deployed by a single person. In addition, the large size of the unit creates a potential intrusion to traffic (see picture below). The equipment MoDOT currently utilizes from MoDOT is small (can fit in a passenger vehicle) and can be deployed in minutes.

The other factor leading to the request for a SFS approval is based on the fact that MoDOT has already invested into Miovision equipment. To date, district offices have already purchased over a dozen video collection units. In addition to the fiscal investment already made, the equipment and services have been sufficiently utilized and proven to provide desired results. The satisfaction of the existing units and service is what has prompted the request for a statewide contract. Other district offices are interested in purchasing equipment, and MoDOT can get a better rate on analysis services by purchasing larger quantities on a statewide contract (as opposed to individual purchases).

Aldis Inc. – GridSmart Camera



Miovision Camera



"SOLE SOURCE" PROCUREMENT JUSTIFICATION

Please complete and return to the Purchasing Services Section (PSS). A signed and dated quote must be included with the justification.

Section 18-4-306, MCA, allows a contract to be awarded for a supply or service item without competition under certain circumstances. The required item must be available only from a single supplier. "Sole Source" is distinguishable from "Sole Brand" in that only one supplier is available to provide the supply or service. Circumstances which could necessitate a sole source procurement are: (1) the compatibility of current services or equipment, accessories, or replacement parts, (2) there is no existent equivalent product, or (3) only one source is acceptable or suitable for the supply or service item. Sole source procedures do not apply if the item is under \$5,000. The determination as to whether a procurement shall be made as a sole source shall be made by the SPB, unless specifically authorized in the agency delegation agreement. ARM 2.5.604. A request by a state agency to the SPB must be accompanied by this form and must include a signed and dated quote. The following items do not require sole source justification: (1) professional licenses, (2) dues to associations, (3) renewal of software license agreements; and (4) purchase or renewal of maintenance agreements for software or hardware.

Department name: Transportation - Traffic & Safety Bureau

1. Name of product or service: Scout Video Collection Unit and Power Packs

2. Name of product manufacturer: Miovision

3. Name of "sole" product supplier or service provider: Miovision

4. What evaluation of other product suppliers or service providers was made? (Please furnish names, addresses and other documentation.)

Researched the COUNTkit 120 Video Counting Starter Package. This package is essentially a video camera, a counting board, and specialized software. The video camera is set up at an intersection and then an SD card is brought back to the office to watch on a computer where an employee must manually count traffic off of the video. The cost of this system for two cameras, the counting board, and software is \$5,099. Countingcars.com PO Box 16269 St Louis Park, MN 55416

Traffic counts can also be generated from placing fixed cameras placed at intersections. These cameras are either necessary on each approach or a type of camera that can view all approaches at once. The GridSmart fish eye camera gets wired into the traffic signal cabinet and can provide turning movement counts at intersections as well as other traffic signal functions with a single camera. The system cost of a camera, CPU, and software is \$11,250. This system is not portable and would need be installed at each intersection. GridSmart contact Corey Good, cell 561-289-9989, 10545 Hardin Valley Rd Knoxville, TN 37932.

5. What makes this particular product or service unique and unavailable from other sources?

The Miovision system processes the counts for you and provides a report on traffic volumes. It does not require employees to watch video to count the vehicles/pedestrians themselves. Miovision can also much more easily handle roundabout counts, while the COUNTkit120 as a simple video camera could not.

Miovision is a portable system that can be easily put in a vehicle and moved to any intersection as needed unlike the GridSmart system.

6. How did you determine that there was only one source for the product or service?

There are no comparable systems out there through exhaustive internet searches and standards of practice in the industry. Also the Planning Department went through the RFP process for this type of data collection system and only got two responses. One of these did not meet the needs of being a portable system. The other was the Miovision system.

7. What product supplier or service provider has your Department used until now to satisfy similar requirements?

We currently have two Miovision systems. We have also relied on manual counting techniques that have limitations due to resources and manpower.

Authorized Signature

Date

Automated Video Data Collection System Bid Specification

General

- The purpose of this Invitation for Bid is to obtain bid proposals for portable non-intrusive video-based traffic data collection systems that will meet the design requirements and provide required traffic data rendered from the video as specified below.
- The non-intrusive video-based traffic data collection system must be a current production unit with available published specifications.

Design

- The system must be completely portable and be capable of being set up and operated by a single individual.
- The entire system must be transportable in a mid-size (or larger) vehicle: no trailers or externally mounted cargo containers.
- The system must be fully self-contained and cannot require the use of other electronic equipment to perform its designed operation that is not part of the system as purchased.
- The system must be able to operate on its own power and cannot require power from an external source that is not part of the system as purchased.
- The system must be able to record and store data continuously for a minimum of 48 hours without interruption or operator intervention.
- The collected data must be obtainable from the system via USB port-compatible means: e.g. data is stored on an SD card or other USB compatible media that can be plugged into a USB port on a laptop or desktop PC and downloaded and saved and/or uploaded to the data processing site.
- The designed set up and operation of the system must be able to take advantage of existing roadside infrastructure including light or sign poles or other existing anchoring structures.
- The system must be capable of recording video traffic data across an intersection, roundabout or mid-block location in urban environments which may include low light conditions.
- The system must be capable of recording video traffic data on rural roads in low light conditions.
- The system must provide anti-theft features as part of its designed set up and operation.

Software and Data

- The video traffic data collected must be capable of rendering traffic information on volume and classification of motorcycles, small, medium and large vehicles and busses, pedestrians, and bicycles. Information rendered must be at least 95% accurate for volume detection and 90% accurate in vehicle classification. Data rendered should be available in turning movement and individual roadway formats.
- The video traffic data collected must be capable of providing traffic data information in intervals of 1 minute to 1 hour.
- The processed video and traffic data must be accessible via a web-based interface that has tiered password protected access that is controlled by Traffic Data Collection & Analysis personnel.
- Video data processing costs cannot exceed TDCA allotted budget for video data processing.



Dave Freudenthal
Governor

Wyoming Department of Transportation

"Providing a safe, high quality, and efficient transportation system"

5300 Bishop Boulevard
Cheyenne, Wyoming 82009-3340



John F. Cox
Director

October 8, 2014

MEMORANDUM

TO: Hans Hehr, Procurement Services Manager, Cheyenne

FROM: Lee Roadifer, P.E., Traffic Studies Engineer, Cheyenne

SUBJECT: Sole Source documentation for Two (2) Miovision Video Collection Units purchase request

The Traffic Program intends to purchase an additional two (2) Scout Video Counter Units (Scouts) from Miovision Technologies. The Miovision Scout is a unique product used for collecting turning movement counts at intersections via video technology. This technology has proven so effective with the previously purchased four (4) units that we have started counting intersections almost exclusively by video. The addition of these two units will allow us to collect turning movement counts at all signalized intersections in a single week in the majority of our cities.

Miovision is a Canadian company that also does business in the United States. Miovision is the only company that makes this type of video counter unit that allows for the automation of turning movement counts with the same accuracy as experienced count technicians. We have been using this technology since 2011 and it has proven to be highly accurate, easy to use and greatly improves the efficiency of our counting operations. These new units are to expand our existing resources to where we can be even more efficient in collecting count data by minimizing the number of trips to a given town to collect count data.

cc:

Joel Meena, P.E., State Traffic Engineer, Cheyenne
Jeff Brown, P.E., Assistant State Traffic Engineer, Cheyenne
File