

## Data Exchange (DE)

### NAVTEQ TMC Conditions Feed

**Version 1.0**

**02/05/2015**

## DOCUMENT REVISION HISTORY

Name	Date	Reason For Changes	Version
ISG	02/05/2015	Initial Version	1.0

**FEED RELEASE NOTES**

<b>Version</b>	<b>Date</b>	<b>Release details</b>
1.0	02/05/2015	XML feed release for NAVTEQ TMC Conditions

## Type: NAVTEQ TMC Conditions XML

Provides travel time for each of the NAVTEQ TMC Conditions.

Data available in formats:

1. XML
2. JSON

Developer can access data either SOAP service or RESTful service.

Element or attributes used in XML

Element	Description	Example
NAVTEQRAW	Root tag of the NAVTEQ TMC Condition Raw XML File.	<NAVTEQRAW versionNumber="1.0" createdDate="2015-02-15T02:32:26-04:00">
versionNumber	This attribute represents schema version	versionNumber="1.0"
createdDate	Attribute: date time when user requested for travel time data	createdDate="2015-02-15T02:32:26-04:00"
TMC	One or more tag which contains detail of each TMC.	<TMC tmc="120-19808" spd="11.40" jf="1.05" cf="0.73" state="New Jersey"/>
Tmc	TMC code	tmc="120-19808"
tt	Indicates travel time of current TMC in minutes.  Refer <a href="#">Appendix A</a> for more details.	tt="1.61"  Data will be up to 2 decimal places.
spd	Average speed of current TMC. Unit : mph (miles per hour)  Refer <a href="#">Appendix A</a> for more details.	spd="11.40"  Data will be up to 2 decimal places.
jf	Jam factor of TMC Refer <a href="#">Appendix A</a> for more details.	jf="1.05"  Data will be up to 2 decimal places.
cf	Confidence factor of TMC. Level of confidence with respect to traffic information.  Refer <a href="#">Appendix A</a> for more details.	cf="0.73"  Data will be up to 2 decimal places.
state	State name	state="New Jersey"

**Example: NAVTEQ Condition (XML)**

```
<NAVTEQRAW createdDate="2015-02-15T02:32:26-04:00" versionNumber="1.0">
<TMC state="New Jersey" cf="0.99" jf="0.00" spd="55.30" tt="420.84" tmc="103-04152"/>
<TMC state="New Jersey" cf="0.99" jf="0.00" spd="55.30" tt="410.83" tmc="103-04153"/>
<TMC state="New Jersey" cf="0.99" jf="0.00" spd="59.47" tt="52.55" tmc="103-04154"/>
<TMC state="New Jersey" cf="0.99" jf="0.48" spd="63.10" tt="58.53" tmc="103-04155"/>
<TMC state="New Jersey" cf="0.97" jf="0.21" spd="64.29" tt="43.15" tmc="103-04156"/>
<TMC state="New Jersey" cf="0.95" jf="0.01" spd="65.22" tt="35.67" tmc="103-04157"/>
<TMC state="New Jersey" cf="0.99" jf="0.32" spd="63.80" tt="54.08" tmc="103-04158"/>
<TMC state="New Jersey" cf="0.98" jf="1.26" spd="59.63" tt="105.54" tmc="103-04159"/>
<TMC state="New Jersey" cf="0.99" jf="0.78" spd="61.79" tt="129.75" tmc="103-04160"/>
</NAVTEQRAW>
```

**NAVTEQ TMC Conditions XML Schema**

```
<?xml version="1.0" encoding="UTF8"?>
<xs:schema attributeFormDefault="unqualified" elementFormDefault="qualified"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="NAVTEQRAW">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="TMC" maxOccurs="unbounded"
minOccurs="0">
          <xs:complexType>
            <xs:simpleContent>
              <xs:extension base="xs:string">
                <xs:attribute name="tmc"
type="xs:string" use="optional"/>
                <xs:attribute name="tt"
type="xs:float" use="optional"/>
                <xs:attribute name="spd"
type="xs:byte" use="optional"/>
                <xs:attribute name="jf"
type="xs:float" use="optional"/>
                <xs:attribute name="cf"
type="xs:float" use="optional"/>
                <xs:attribute name="state"
type="xs:string" use="optional"/>
              </xs:extension>
            </xs:simpleContent>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
      <xs:attribute name="versionNumber"
type="xs:float"/>
      <xs:attribute name="createdDate" type="xs:dateTime"/>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

### Example: NAVTEQ TMC Conditions (JSON)

```
{ "NAVTEQRAW": {  
  "TMC": [  
    {  
      "jf": "0.90",  
      "tt": 1.59,  
      "tmc": "120-19808",  
      "spd": 11.53,  
      "cf": 0.72,  
      "state": "New Jersey"  
    },  
    {  
      "jf": "0.00",  
      "tt": 2.25,  
      "tmc": "120-23294",  
      "spd": 27.44,  
      "cf": 0.71,  
      "state": "New Jersey"  
    },  
    {  
      "jf": 2.87,  
      "tt": 1.74,  
      "tmc": "120-23206",  
      "spd": "26.70",  
      "cf": "0.80",  
      "state": "New Jersey"  
    },  
    {  
      "jf": "0.00",  
      "tt": 0.17,  
      "tmc": "120-23455",  
      "spd": 19.88,  
      "cf": 0.69,  
      "state": "New Jersey"  
    }  
  ],  
  "createdDate": "2015-02-15T02:32:26-04:00",  
  "versionNumber": 1  
}
```

### How do I access this data using SOAP services?

SOAP Service end point

End point address	<a href="http://data.xcmdata.org/ISGDE/soap/linkProvider?wsdl">http://data.xcmdata.org/ISGDE/soap/linkProvider?wsdl</a>
Method to access data in XML format	getNavteqConditionDataVer3
Method to access data in JSON format	getNavteqConditionDataVer3JSON

**Parameter:**

User has to pass stateCode parameter value to get NAVTEQ TMC conditions data from above two methods.

stateCode – to get TMC by State

User may pass ALL to get all 3 state (New Jersey, New York and Connecticut) link data without any filtration.

For example: `getNavteqConditionDataVer3(ALL)`  
`getNavteqConditionDataVer3JSON(ALL)`

Possible values for stateCode parameter are:

Value	Description
All	All States
NJ	New Jersey
NY	New York
CT	Connecticut

## How do I access this data using RESTful services?

Restful service URL

Data format	URL
Method to access data in <b>XML</b> format	<a href="https://data.xcmdata.org/ISGDE/rest/linkProvider/getNavteqConditionDataVer3?System=username&amp;Key=password">https://data.xcmdata.org/ISGDE/rest/linkProvider/getNavteqConditionDataVer3?System=username&amp;Key=password</a>
Method to access data in <b>JSON</b> format	<a href="http://data.xcmdata.org/ISGDE/rest/linkProvider/getNavteqConditionDataVer3JSON?stateCode=stateCode&amp;System=username&amp;Key=password">http://data.xcmdata.org/ISGDE/rest/linkProvider/getNavteqConditionDataVer3JSON?stateCode=stateCode&amp;System=username&amp;Key=password</a>

Possible values for stateCode parameter are:

Value	Description
All	All States
NJ	New Jersey
NY	New York
CT	Connecticut

## How to pass Username and Password for pull access?

User must insert approved Username and Password in the feed URL.

For example:

<http://data.xcmdata.org/ISGDE/rest/linkProvider/getNavteqConditionDataVer3?stateCode=NJ&System=username&Key=password>

If user wants to access above link then user has to replace his/her valid user name for username key word and password for password key word.

Suppose, username = testuser & password = welcome01 then user can access feed as per below URL.

<http://data.xcmdata.org/ISGDE/rest/linkProvider/getNavteqConditionDataVer3?stateCode=NJ&System=testuser&Key=welcome01>



## **Appendix A**

### **jf (Jam Factor)**

The number between 0.0 and 10.0 indicates the expected quality of travel.

When there is a road closure, the Jam Factor will be 10.

As the number approaches 10.0 the quality of travel is getting worse.

-1.0 indicates that a Jam Factor could not be calculated.

### **cf (Confidence Factor)**

The number between 0.0 and 1.0 indicating the percentage of real time data included in the speed calculation.

$0.7 < CF \leq 1.0$  indicates real time speeds

$0.5 < CF \leq 0.7$  indicates historical speeds

$0.0 < CF \leq 0.5$  indicates speed limit

To only report speeds where real time data is available, it is recommended to only include speeds with a confidence greater than 0.7.

A confidence value of -1 is possible. It indicates that the confidence could not be calculated.

### **spd (Speed)**

The average speed that current traffic is travelling.

-1.0 indicates that the average speed could not be calculated.

Speed data is in miles per hour.

### **tt (Travel Time)**

The time in minutes to traverse this route (TMC).

-1.0 indicates that the duration could not be calculated.