



Closed Captioning for Access



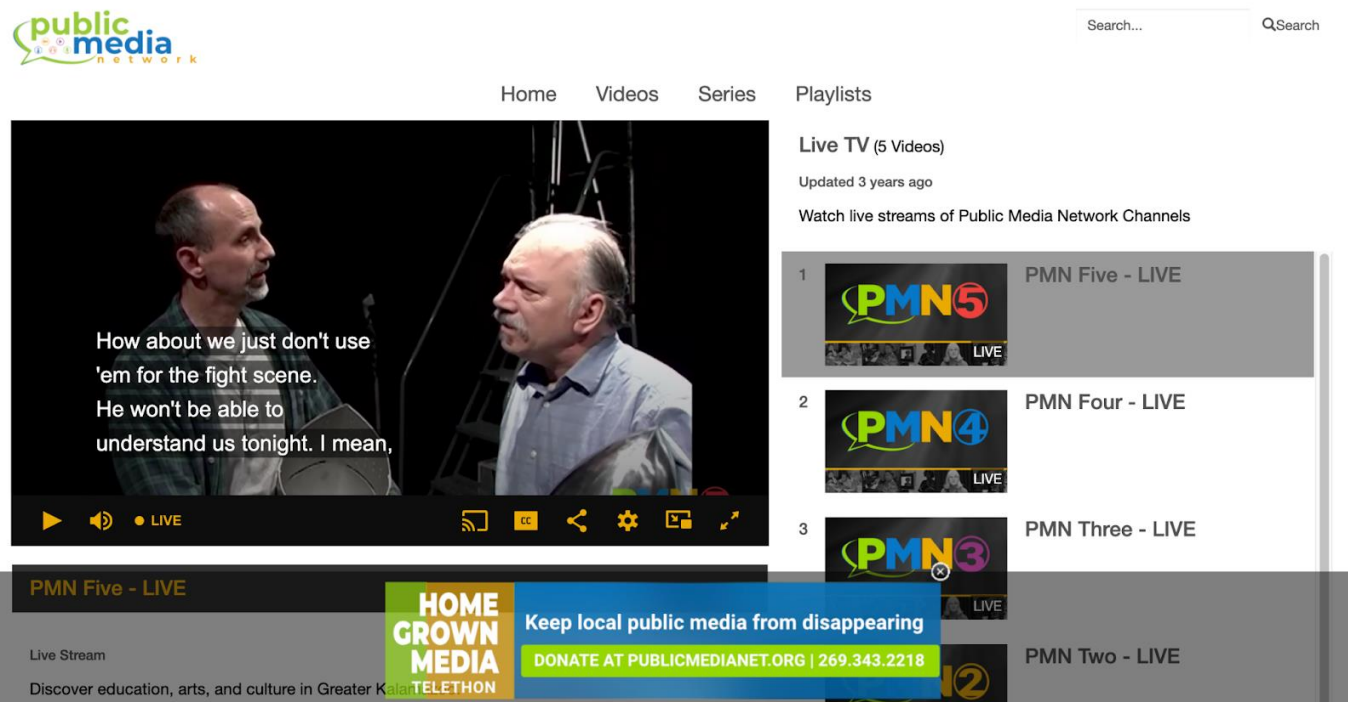
## Why Public Media Network is Exploring Closed Captioning

### Accessibility

- Hard of Hearing
- Spanish Language Speaking Community
- Searchable meetings
- Caption for live broadcast across platforms
- Caption for video on demand

Strategic Goal to provide closed captioning for at least 50% of our programming by 2023.

# Goals for Public Media Network Captioning Test

A screenshot of the Public Media Network website. The top navigation bar includes the logo, a search bar, and links for Home, Videos, Series, and Playlists. The main content area features a large video player on the left showing a live stream of two men talking, with subtitles at the bottom. To the right of the video player is a list of live streams, including PMN Five - LIVE, PMN Four - LIVE, PMN Three - LIVE, and PMN Two - LIVE. At the bottom of the page, there is a banner for the "HOME GROWN MEDIA TELETHON" with the text "Keep local public media from disappearing" and a donation link.

**24x7 Live Captioning – 2 of 5 channels**  
**Mix of programming types**  
**Mix of live and pre-recorded**  
**Explore automated caption workflows**  
**Understand impact on time, costs, benefits**

## Approach for trial captioning

TEL<sub>VUE</sub> SMARTCAPTION™

WE SHARE YOUR VISION™

LIVE 



**Partnered with TelVue to pilot test TelVue SmartCaption Live**  
(provides our playback server, mobile, and OTT apps)

## 24x7 Smart Mode



- ☒ Enable Monitor?
- ☒ Embed Captions? ?
- ☒ SmartCaption LIVE? ?
- ☒ Smart 24x7 Mode? ?

Auto captions **unique** programming only

Scheduled files captioned offline in advance

Live events without captions are captioned live

Limits usage to unique programming hours for 24x7 captioning



## Live Captioning Sources



zoom

GoToMeeting

Skype

Cisco  
webex



TELVue  
HYPERCASTER™

NDI

SRT

SECURE  
RELIABLE  
TRANSPORT



LIVE

Worked across our video sources:

SDI, IP, AJA Kumo Video Router

Streaming sources (RTMP)

Social Media (Facebook Live, YouTube)

LiveU, Zoom

## Automated Captioning, Existing Captions



**Files with embedded 608/708 played captions**

- **Auto detected & extracted as side car file**

**Attach sidecar captions to a file**

**Auto generated captioning for files attached to content**

**Auto generated captions for live recorded files**

## Automated Captioning, Existing Captions



**Generated caption files in any case we tested:**

- **Displayed on cable channels**
- **Displayed on live streams**
- **Displayed on TelVue VOD / OTT / Mobile**
- **Embedded as 608/708 for sharing**



# Custom Language Models

Public Media Network

Dashboard
Media
Moderation
Collections
Activity
Contact Us
Administration

[Organizations](#) » [Public Media Network](#) » Language Models

Models

Substitutions

New Language Model

Name	Status	Language	Default?	
Public Media Network	Complete	English	✓	⚙️ ▼
Kalamazoo City	Complete	English		⚙️ ▼
Portage Public Schools	Complete	English		⚙️ ▼
Kalamazoo Public Schools	Complete	English		⚙️ ▼

Phrases \*

Call to Order  
New Business  
Public Comment  
Citizen Comment  
Old Business  
Agenda  
Adjourn  
Zoning  
Invocation  
Commissioner  
Anderson  
Cooney  
Stephanie Hoffman  
Esteven Juarez  
Juarez  
Hoffman  
Qianna Decker  
Qianna  
Jeanne Hess  
Jeanne  
Chris Praedel  
Praedel  
Rebekah Kik  
Clyde Robinson  
Jim Ritsema  
Jeff Chamberlain  
Kalamazoo  
Comstock  
Oshtemo  
Ordinance

Save

## LIVE Caption Automation – Per Live Source, Series, Events

Captioning

☒ Caption? ?

Source Language ?

English (United States)

Custom Language Model ?

Kalamazoo City

☒ Profanity Filter? ?

Portuguese (Brazilian)  
Chinese (Mandarin)  
✓ English (United States)  
English (United Kingdom)  
French  
German  
Italian  
Japanese  
Korean  
Spanish (Argentinian)  
Spanish (Castilian)  
Spanish (Chilean)  
Spanish (Colombian)  
Spanish (Mexican)  
Spanish (Peruvian)

### Easy set-up:

- Custom language model
- Source language
- Automation settings

### Set & Forget

## Monitoring

(191) PMN Five  
Next Gap: about 3 hours  
   

Chuck Bentley presents / Chuc...  
02:32:25



09:00:00 - 11:32:25



A World of Difference / The Am...



11:32:25 - 12:05:20  
03/25/22



Dashboard displayed captioning

CC icons to indicate captions on programs

# Captioning & Content Management

Meeting × Show 100 results per page. Go Thumbnail View Bertrand Air Zoo .mpg

← Previous 1 2 3 4 5 6 7 8 9 10 Next → Displaying content files 1 - 100 of 994 in total

<p><a href="#">Comstock planning 2022.03.24.</a></p> <p>Running Time: 01:42:47 Comstock Township Board March 24, 2022 Comstock Town...</p>	<p><a href="#">oshtemo planning 2022.03.24m</a></p> <p>Running Time: 00:18:05 Oshtemo Township March 24, 2022 Oshtemo Towns...</p>	<p><a href="#">oshtemo 2022.03.22.mpg</a></p> <p>Running Time: 01:41:22 Oshtemo Township March 22, 2022 Oshtemo Towns...</p>	<p><a href="#">2022.03.22 oshtemo twp xba.m</a></p> <p>Running Time: 01:41:22 Oshtemo Township March 22, 2022 Oshtemo Towns...</p>	<p><a href="#">kcity 2022.03.21.mpg</a></p> <p>Running Time: 01:00:43 City of Kalamazoo March 21, 2022 Kalamazoo Cit...</p>
<p><a href="#">KPS 2022.03.17.mpg</a></p> <p>Running Time: 02:39:37 Kalamazoo Public Schools March 17, 2022 Kalamazoo Pub...</p>	<p><a href="#">ALPACT 2022.03.17.mpg</a></p> <p>Running Time: 01:54:59 ALPACT special event MI State Police Discriminati...</p>	<p><a href="#">pmnLIVETHISWEEK 2</a></p> <p>Running Time: 00:07:55 Public Media Network LIVE this week on PMN</p>	<p><a href="#">pmnLIVETHISWEEK 2022 MARCH</a></p> <p>Running Time: 00:08:42 Public Media Network LIVE LIVE this week on PMN</p>	<p><a href="#">kcity 2022.03.21.mpg</a></p> <p>Running Time: 01:00:43 City of Kalamazoo March 21, 2022 Kalamazoo Cit...</p>
<p><a href="#">comstock preshow 2022.mpg</a></p> <p>Running Time: 00:16:13 Comstock Charter Township Up Next: LIVE Comstock Towns...</p>	<p><a href="#">oshtemo preshow 2022.mpg</a></p> <p>Running Time: 00:15:00 Oshtemo Charter Township Up Next: LIVE Oshtemo Townsh...</p>	<p><a href="#">ktwp preshow 2022.</a></p> <p>Running Time: 00:15:55 Kalamazoo Township Up Next: The Kalamazoo Towns...</p>	<p><a href="#">kcounty preshow 2022.mpg</a></p> <p>Running Time: 00:15:00 Kalamazoo County Governme... Up Next: Kalamazoo County Bo...</p>	<p><a href="#">kcounty 2022.03.15pmn.mpg</a></p> <p>Running Time: 03:00:00 Kalamazoo County - Board ... March 15, 2022 Kalamazoo Cou...</p>

Edit

Play Now

Preview

Generate Closed Captions

Schedule

Transcode

Categories

Upload

Archive

Add to..

Purge

Delete from...



Icon to see what is captioned  
Ability to trigger caption generation  
Previews show captions  
Trimming preserved captions  
Captions follow for VOD publishing



# Searchable Captions



Home Videos Series Playlists

Search...

Search



Kalamazoo Public Schools - March 17, 2022 Kalamazoo Public School Board meeting

Updated about 3 hours ago

## Captions

☐ Synchronize Video and Captions

Schools

Search

Displaying 46 results for search term: "Schools" ✕

00:02:41

This is the public meeting of the Kalamazoo Public Schools,

00:14:12

will be no further changes or movements between schools.

00:15:04

Last Wednesday, each of our elementary schools held a morning,

00:15:14

schools to hear from the principal.

00:15:32

Our award-winning Loy Norrix High schools deck up professional business

00:18:46

Kalamazoo Public Schools is a vibrant district.

# Caption Translation



Kalamazoo Public Schools - March 17, 2022 Kalamazoo Public School Board meeting

## Caption Translation Language Options

Select any languages you wish to potentially translate captions to:

- |  |   |  |  |
|--|---|--|--|
| <input type="checkbox"/> Afrikaans             | <input type="checkbox"/> Georgian       | <input type="checkbox"/> Lithuanian        | <input type="checkbox"/> Shona               |
| <input type="checkbox"/> Albanian              | <input type="checkbox"/> German         | <input type="checkbox"/> Luxembourgish     | <input type="checkbox"/> Sindhi              |
| <input type="checkbox"/> Amharic               | <input type="checkbox"/> Greek          | <input type="checkbox"/> Macedonian        | <input type="checkbox"/> Sinhala (Sinhalese) |
| <input type="checkbox"/> Arabic                | <input type="checkbox"/> Gujarati       | <input type="checkbox"/> Malagasy          | <input type="checkbox"/> Slovak              |
| <input type="checkbox"/> Armenian              | <input type="checkbox"/> Haitian Creole | <input type="checkbox"/> Malay             | <input type="checkbox"/> Slovenian           |
| <input type="checkbox"/> Azerbaijani           | <input type="checkbox"/> Hausa          | <input type="checkbox"/> Malayalam         | <input type="checkbox"/> Somali              |
| <input type="checkbox"/> Basque                | <input type="checkbox"/> Hawaiian       | <input type="checkbox"/> Maltese           | <input checked="" type="checkbox"/> Spanish  |
| <input type="checkbox"/> Belarusian            | <input type="checkbox"/> Hebrew         | <input type="checkbox"/> Maori             | <input type="checkbox"/> Sundanese           |
| <input type="checkbox"/> Bengali               | <input type="checkbox"/> Hindi          | <input type="checkbox"/> Marathi           | <input type="checkbox"/> Swahili             |
| <input type="checkbox"/> Bosnian               | <input type="checkbox"/> Hmong          | <input type="checkbox"/> Mongolian         | <input type="checkbox"/> Swedish             |
| <input type="checkbox"/> Bulgarian             | <input type="checkbox"/> Hungarian      | <input type="checkbox"/> Myanmar (Burmese) | <input type="checkbox"/> Tagalog (Filipino)  |
| <input type="checkbox"/> Catalan               | <input type="checkbox"/> Icelandic      | <input type="checkbox"/> Nepali            | <input type="checkbox"/> Tajik               |
| <input type="checkbox"/> Cebuano               | <input type="checkbox"/> Igbo           | <input type="checkbox"/> Norwegian         | <input type="checkbox"/> Tamil               |
| <input type="checkbox"/> Chinese (Simplified)  | <input type="checkbox"/> Indonesian     | <input type="checkbox"/> Nyanja (Chichewa) | <input type="checkbox"/> Telugu              |
| <input type="checkbox"/> Chinese (Traditional) | <input type="checkbox"/> Irish          | <input type="checkbox"/> Pashto            | <input type="checkbox"/> Thai                |
| <input type="checkbox"/> Corsican              | <input type="checkbox"/> Italian        | <input type="checkbox"/> Persian           | <input type="checkbox"/> Turkish             |
| <input type="checkbox"/> Croatian              | <input type="checkbox"/> Japanese       | <input type="checkbox"/> Polish            | <input type="checkbox"/> Ukrainian           |
| <input type="checkbox"/> Czech                 | <input type="checkbox"/> Javanese       | <input type="checkbox"/> Portuguese        | <input type="checkbox"/> Urdu                |
| <input type="checkbox"/> Danish                | <input type="checkbox"/> Kannada        | <input type="checkbox"/> Punjabi           | <input type="checkbox"/> Uzbek               |
| <input type="checkbox"/> Dutch                 | <input type="checkbox"/> Kazakh         | <input type="checkbox"/> Romanian          | <input type="checkbox"/> Vietnamese          |
| <input type="checkbox"/> English               | <input type="checkbox"/> Khmer          | <input type="checkbox"/> Russian           | <input type="checkbox"/> Welsh               |
| <input type="checkbox"/> Estonian              | <input type="checkbox"/> Korean         | <input type="checkbox"/> Samoan            | <input type="checkbox"/> Xhosa               |
| <input type="checkbox"/> Finnish               | <input type="checkbox"/> Kurdish        | <input type="checkbox"/> Scots Gaelic      | <input type="checkbox"/> Yiddish             |
| <input type="checkbox"/> French                | <input type="checkbox"/> Kyrgyz         | <input type="checkbox"/> Serbian           | <input type="checkbox"/> Yoruba              |
| <input type="checkbox"/> Frisian               | <input type="checkbox"/> Lao            | <input type="checkbox"/> Sesotho           | <input type="checkbox"/> Zulu                |
| <input type="checkbox"/> Galician              | <input type="checkbox"/> Latvian        |  |  |

⚙️
▼

- Edit
- Distribute (1)
- Download
- Add to Playlist
- Syndicate
- Transcode
- Generate Captions
- Translate Captions**
- Edit Captions
- Extract Audio
- Clear Storage Space
- Delete

## Automatic Caption Translation

Select any languages you wish to automatically translate generated or uploaded captions to:

- ☐ Spanish



Live Stream

Connect with your elected officials with gavel to gavel coverage of local government meetings. Coverage

[Read More](#)

Live TV (5 Videos)

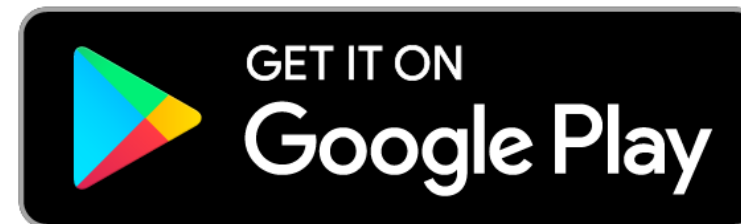
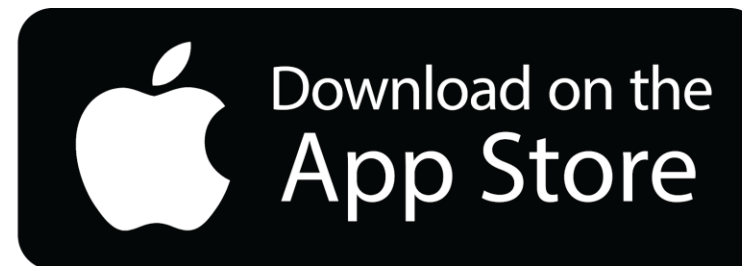
Updated 3 years ago

1



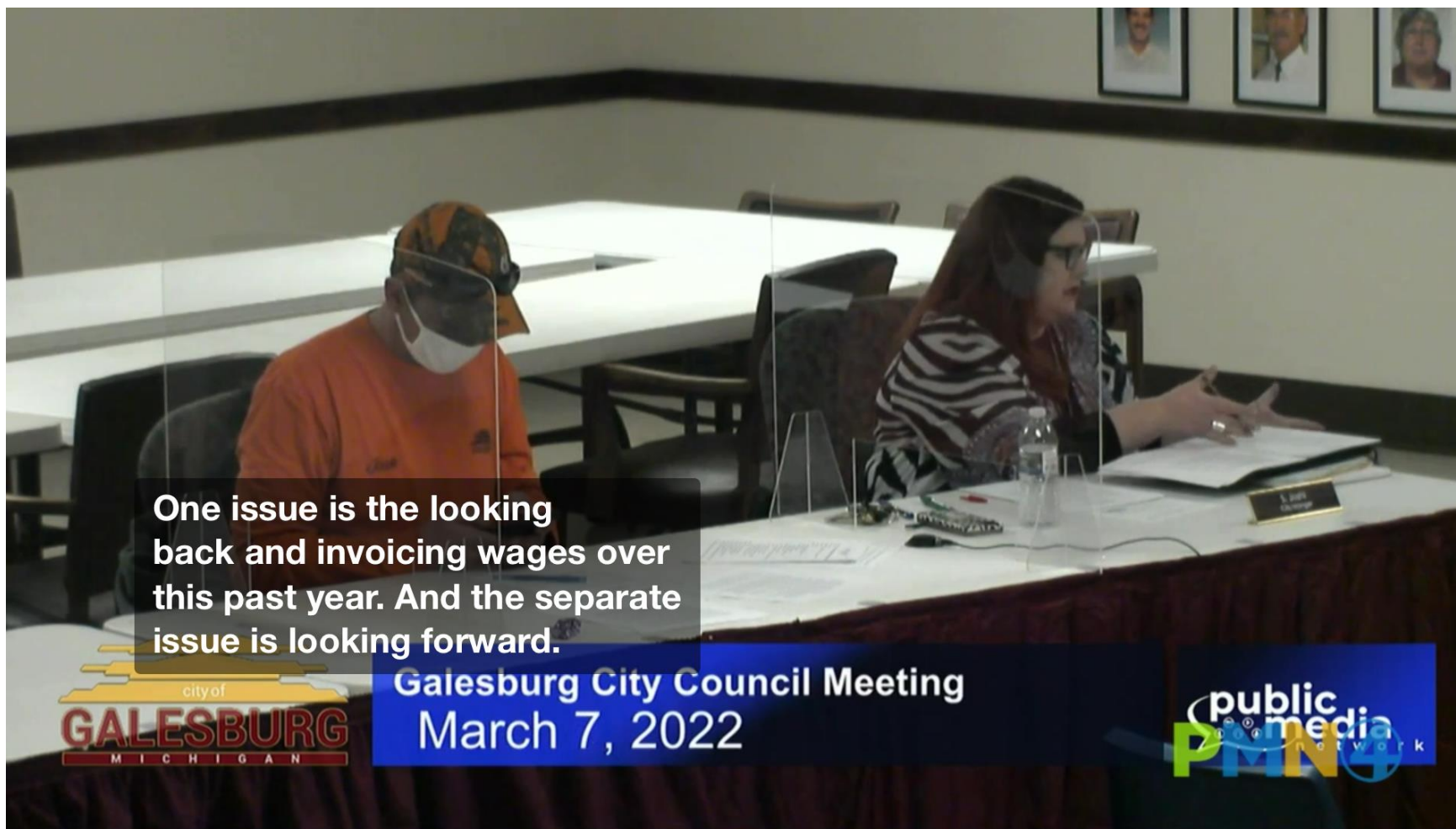
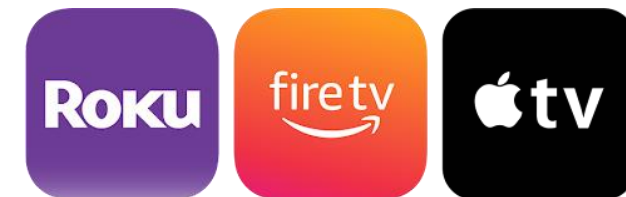
PMN Five - LIVE

## Captions on our mobile iOS & Android Apps





## Captions on our OTT Apps





## SmartCaption Caption Editor

TELYUE File Edit Timecode Insert Tools x1.00 00:02:46:08 / 02:39:33:03 Publish

**Video Player:** Kalamazoo Public Schools. Every child. Every opportunity. Every time.

**Current Caption:** This is the public meeting of the Kalamazoo Public Schools,

**On March 17th.** Clear

**Preview:** This is the public meeting of the board of education. Take Now PREVIEW

**Timeline:** 00:02:46:08

**Caption List:**

- 5: 00:02:41:27 - 00:02:45:22. 158 WPM, 932 CPM. This is the public meeting of the Kalamazoo Public Schools.
- 6: 00:02:45:22 - 00:02:46:26. 155 WPM, 983 CPM. board of education.
- 7: 00:02:47:13 - 00:02:51:15. 147 WPM, 574 CPM. I like I said on March 17th at 7:02 PM.

## SmartCaption Caption Editor – Multiple Languages

TELYUE File Edit Timecode Insert Tools x1.00 00:02:43;17 / 02:39:37:00 Publish

Kalamazoo Public Schools  
Every child. Every opportunity. Every time.

Esta es la reunión pública de las Escuelas Públicas de Kalamazoo,

El 17 de marzo.

Clear

Take Now

PREVIEW

5 00:02:41:27 174 WPM 1026 CPM

Esta es la reunión pública de las Escuelas Públicas de Kalamazoo,

6 00:02:45:22 155 WPM 983 CPM

Junta de Educación.

7 00:02:47:13 206 WPM

Me gusta lo que dije el 17 de marzo a las 7:02 p. m.

00:02:43;17

# Daily Workflow



## **Tips for Accuracy with A.I. captioning**

**High Quality Audio Helpful**

**Use Custom Language Models at least for names, capitalization**

## **Observations – Lessons Learned**

**Impressed with overall quality of AI captions with minimal effort**

**Worked well across different types of programming**

**Government partners really interested in searchable captions**

**Focus efforts with language models on names of elected officials, etc.**



## Getting Buy-In



## Next Steps

**Evaluate set-up and ongoing costs of various systems**

**Budget set-up & on-going costs**

- **Estimate approx 4,000 hours/year of unique programs across all 5 channels**
- **TelVue SmartCaption: less than \$2k per channel one-time licensing/setup**
- **Under \$2.50/hour of AI captioning**

## Next Steps



**Sponsorships for Captioning Costs**



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