```
# Once a year go to AQS and get DV file
# Each day get report from AirNow Tech by hand.

#Ozone seasons 40 CFR Part 58 Appendix D 4.1(i) Table D-3
#ED Revised 05/26/2016
#Illinois   March     October
#Indiana    March     October
#Michicagn  March     October
#Minnesota  March     October
#Ohio       March     October
#Wisconsin  March     October 15

#library(XLConnect)
library(rgdal);
library(sp);
library(maps);
library(maptools);
library(sendplot);
library(gdata);

if(FALSE){
dvs0114 <- read.csv("g:/o3fasttrack/2015_data/dvs0114.csv", stringsAsFactors = FALSE)
dvs0114$certified <- ifelse(dvs0114$certified == "",NA,dvs0114$certified)
#saveRDS(dvs0114, file = ("g:/o3fasttrack/2015_data/dvs0114.rds"))
}

#### Set the level of the standard ####

naaqs <- .065

#### Set the color breaks ####
colbreaks <- c(0,0.066,0.071,0.076,0.900)
collabs <- c("green","yellow","orange","red")

####  read in new sets and combine with the yearly set ####

airnow<-readRDS("g:/o3fasttrack/2015_data/airnowfiles/airnow.rds");
airdates<-as.character(seq(from=as.Date("2015-04-01"),to=Sys.Date()-1,by=1));
airdates<-airdates[!airdates %in% unique(airnow$date)];
airnowtoday<-lapply(airdates, function(x) {
#x <- airdates[1]
print(x)
temp<-
list.files(path="g:/o3fasttrack/2015_data/airnowfiles/",pattern=format(as.Date(x),"%Y%m
```

```
%d"),full.name=TRUE)
temp<-try(read.csv(temp,stringsAsFactors=FALSE))
if(class(temp) == "data.frame"){
names(temp)<-tolower(names(temp));
temp$site.aqs<-sprintf("%09d",temp$site.aqs)
temp<-by(temp,temp$site.aqs,function(xx) {
xx$minpoc<-min(xx$poc,na.rm=TRUE);
return(xx)
})
temp<-do.call("rbind",temp)
temp<-subset(temp,poc==minpoc & qc.code==0,c("site","site.aqs","date..lst.","value"))
names(temp)<-c("sitename","siteid","date","conc")
temp$date<-format(as.Date(temp$date,"%m/%d/%Y"))
return(temp);
}
});
airnowtoday<-do.call("rbind",airnowtoday);


airnow<-rbind(airnow,airnowtoday);
airnow<-unique(airnow[!is.na(airnow$siteid),]);
airnow$conc<-as.numeric(airnow$conc);
airnow$siteid<-as.character(airnow$siteid);
# JAM This part looks like it's to handle site name changes. It picks the site with the
longer name
airnow<-by(airnow,airnow$siteid,function(aa) {
sitename<-unique(aa$sitename)
aa$sitename<-sitename[nchar(sitename)==max(nchar(sitename))]
return(aa);
})
airnow<-do.call("rbind",airnow)
airnow<-unique(airnow)
airnow<-airnow[order(airnow$siteid,airnow$date),]
saveRDS(airnow,file="g:/o3fasttrack/2015_data/airnowfiles/airnow.rds")

rm(airnowtoday,airdates)

airnow<-readRDS("g:/o3fasttrack/2015_data/airnowfiles/airnow.rds")

sort(unique(airnow$date));
unique(diff(unique(sort(as.POSIXct(airnow$date, format = "%Y-%m-%d", tz= "GMT"))))) #
Should be 1
```

```
#### Create list of 4 highest values ####

hi4<-by(airnow,airnow$siteid,function(x) {

x<-x[order(-x$conc),c("siteid","conc","date")][1:4,];

names(x)[names(x)=="conc"]<-"max4";

return(x);

});

hi4<-do.call("rbind",hi4);

hi4$year<-as.numeric(format(Sys.Date(),"%Y"))

hi4$max4<-hi4$max4/1000;

hi4<-hi4[!is.na(hi4$siteid),];

#### Create list of 4th highest values ####

max4<-by(hi4,hi4$siteid,function(x) {

x<-x[4,];

});

max4<-do.call("rbind",max4);

max4<-max4[!is.na(max4$siteid),];

#### Read in previous years 4th highs ####

dvsLast<-readRDS("g:/o3fasttrack/2015_data/dvs0114.rds");

dvsLast<-by(dvsLast,dvsLast$siteid,function(x) {

x<-x[x$poc==min(x$poc),];

});

dvsLast<-do.call("rbind",dvsLast);

# JAM the following part looks like it combines a few sites

dvsLast$siteid<-
ifelse(dvsLast$siteid=="390171004","390170018",ifelse(dvsLast$siteid=="391030003","3910
30004",ifelse(dvsLast$siteid=="390870006","390870012",dvsLast$siteid)));

#Sets anything with less than 75% completeness and a non-violating max4 value to NA
then removes all records with NA max4

dvsLast$max4<-ifelse(dvsLast$pctcomp<75 & dvsLast$max4<naaqs,NA,dvsLast$max4);

dvsLast<-subset(dvsLast,siteid %in% unique(airnow$siteid) & !is.na(max4));

#### Read in latlongs, fips, and non-attainment areas and some manual corrections ####

latlongs<-readRDS("g:/o3fasttrack/latlongs.rds")

latlongs <- rbind(latlongs, data.frame(siteid="550590025", latitude = 42.59600 ,
longitude = -87.88600))

latlongs <- rbind(latlongs, data.frame(siteid="180050007", latitude = 39.29432 ,
longitude = -85.76681))

latlongs <- rbind(latlongs, data.frame(siteid="551050030", latitude = 42.51831 ,
longitude = -89.06347))
```

```
latlongs <- rbind(latlongs, data.frame(siteid="551170009", latitude = 43.815230 ,
longitude = -87.791940))

fips<-readRDS("g:/o3fasttrack/fips.rds")

fips$rmap<-
gsub('[\\W]',"",tolower(paste(fips$statename,fips$countyname,sep=",")),perl=TRUE)

fips$rmap<-gsub('saint',"st",fips$rmap);

# JAM: Where does this file come from?

nonatt<-read.csv("g:/o3fasttrack/nayro.csv",stringsAsFactors=FALSE);

nonatt<-subset(nonatt,as.numeric(fips_state) %in% c(17,18,26,27,39,55,21,29) &
pollutant=="8-Hr Ozone
2008",c("state","countyname","area_name","fips_state","fips_cnty"));

nonatt$county<-with(nonatt,paste(fips_state,sprintf("%03d",fips_cnty),sep=""));

#### Create a list of exceedances ####

exceeds<-subset(airnow,conc>(naaqs*1000));

exceeds$county<-substr(exceeds$siteid,1,5);

exceeds<-merge(exceeds,nonatt,by="county",all.x=TRUE)

exceeds<-merge(exceeds,fips,by.x="county",by.y="fips",all.x=TRUE);

exceeds$fips_state<-substr(exceeds$siteid,1,2);

exceeds$fips_cnty<-substr(exceeds$siteid,3,5);

exceeds<-exceeds[order(exceeds$fips_state,exceeds$area_name,exceeds$siteid),]

if(nrow(exceeds)>0) {

nexceeds<-aggregate(date~siteid,data=exceeds,length);

names(nexceeds)<-c("siteid","nexceeds");

} else {

nexceeds<-
data.frame(siteid=as.character(NA),nexceeds=as.numeric(NA),stringsAsFactors=FALSE)

}

#### Create a list of critical values for each monitor ####

critval<-lapply(unique(airnow$siteid),function(x) {

#x<-'550590019';

curyear<-as.numeric(format(Sys.Date(),"%Y"));

prevdvs<-subset(dvsLast,siteid==x & year %in% 2008:curyear);

prevdvs<-lapply((curyear-3):(curyear-1),function(zz) {

temp<-prevdvs[prevdvs$year %in% (zz-2):zz,]

if(length(temp$max4[!is.na(temp$max4)])<3){

dv<-NA;

} else {

dv<-as.numeric(substr(mean(temp$max4),1,5));

}
```

```
dv<-data.frame(year=zz,dv=dv,stringsAsFactors=FALSE)

})

prevdvs<-do.call("rbind",prevdvs)

prevmax4<-subset(dvsLast,year %in% (curyear-2):curyear & siteid==x)$max4;

cval<-round(ifelse(length(prevmax4)==2 & !any(is.na(prevmax4)),(naaqs+.001)*3-
sum(prevmax4),NA),digits=3);

dval<-ifelse(length(prevmax4)==2 &
!any(is.na(prevmax4)),trunc(sum(c(prevmax4,max4[max4$siteid==x,"max4"]))/3*1000)/1000,N
A);

temp<-data.frame(siteid=x,critval=cval,dval=dval,stringsAsFactors=FALSE);

return(list(critval=temp,prevdvs=prevdvs));

});

names(critval)<-unique(airnow$siteid)


#### Set up the mapping parameters ####


states<-
map2SpatialLines(map("state",plot=FALSE,regions=c("illinois","indiana","ohio","minnesot
a","wisconsin","michigan","missouri","kentucky")),proj4string=CRS("+proj=longlat
+ellps=clrk66"));

states<-spTransform(states,CRS("+proj=lcc +lon_0=97w +lat_0=40n +lat_1=33n
+lat_2=45n"));

#dayo3<-subset(airnow,date==as.character(Sys.Date()-1));

#dayo3$conc<-dayo3$conc/1000;

#dayo3<-merge(dayo3,latlongs,by="siteid",sort=FALSE);

#dayo3<-merge(dayo3,nexceeds,by="siteid",sort=FALSE,all.x=TRUE);

#dayo3<-merge(dayo3,critval,by="siteid",sort=FALSE);


#### Create dataframe for daily ozone map ####


dayo3<-merge(do.call("rbind",lapply(critval,function(xx)
xx$critval)),nexceeds,by="siteid",sort=FALSE,all.x=TRUE); # JAM: This is where I need
to add the W126 values

dayo3<-merge(dayo3,max4[,c("siteid","max4")],by="siteid",sort=FALSE,all.x=TRUE);

dayo3<-merge(dayo3,latlongs,by="siteid",sort=FALSE,all.x=TRUE);

dayo3$fips<-substr(dayo3$siteid,1,5);

dayo3<-merge(dayo3,fips,by="fips",sort=FALSE,all.x=TRUE)

dayo3$col<-
as.character(cut(dayo3$dval,breaks=colbreaks,labels=collabs,include.lowest=TRUE,right=F
ALSE));

dayo3$pch<-ifelse(is.na(dayo3$dval),1,21);

dayo3<-subset(dayo3,!is.na(longitude) | !is.na(latitude))

coordinates(dayo3)<-dayo3[,c("longitude","latitude")];

proj4string(dayo3)<-CRS("+proj=longlat +ellps=clrk66");

dayo3<-spTransform(dayo3,CRS("+proj=lcc +lon_0=97w +lat_0=40n +lat_1=33n +lat_2=45n"));

dayo3<-dayo3[order(dayo3$dval),];
```

```
#### Create dataframe for DV by county map ####

cmaxsite<-by(dayo3@data,substr(dayo3@data$siteid,1,5),function(x) {

#x<-subset(dayo3@data,substr(dayo3@data$siteid,1,5)=='29189');

if(is.infinite(max(x$dval,na.rm=TRUE))){

x<-unique(x$siteid);

} else {

x<-unique(x[max(x$dval,na.rm=TRUE)==x$dval & !is.na(x$dval),"siteid"]);

}

});

cmaxsite<-unlist(cmaxsite);

cmaxsite<-dayo3[dayo3$siteid %in% cmaxsite,];

cmaxsite<-cmaxsite[order(cmaxsite$dval),];

rectpos<-function(Splot,x.pct,y.pct) {

x.pos<-x.pct*(mainmap$plot.lims$xmaxs-mainmap$plot.lims$xmins)+mainmap$plot.lims$xmins;

y.pos<-y.pct*(mainmap$plot.lims$ymaxs-mainmap$plot.lims$ymins)+mainmap$plot.lims$ymins;

return(list(x.pos=x.pos,y.pos=y.pos));

}

plot.call<-'plot(states,col="gray")'

plot.run.date <- Sys.Date()-1

plot.extras<-paste('par(xpd=NA);
points(cmaxsite,col="black",bg=cmaxsite$col,pch=cmaxsite$pch,cex=2); mtext("Maximum 8
hour Ozone Design Value (ppm) by County",line=2,cex=3); mtext(format(plot.run.date,"%m-
%d-%Y"),line=-1,cex=3);
legend(x=grconvertX(0.3,from="nfc"),y=grconvertY(0.53,from="nfc"),legend=c(">.075
ppm","0.071-0.075 ppm","0.065-0.070 ppm","<0.065
ppm","missing"),pch=c(rep(21,5),1),pt.bg=c("red","orange","yellow","green",NA),pt.cex=2
);

text(grconvertX(c(0.05,0.8,0.8,0.6,0.03),from="ndc"),grconvertY(c(0.09,0.9,0.75,0.9,0.8
),from="ndc"),labels=c(paste("Produced ",Sys.time()," by USEPA Region 5 Air Monitoring
and Analysis Section",sep=""),"Click here\nfor a list of\nviolating sites","Click
here\nfor a list of\nexceeding sites","Click here for\na summary table","Click here for
a\nmap of the daily\nmaximum 8-hour\nozone
concentrations"),pos=c(4,1,1,1,4),col=c("black","blue","blue","blue","blue"),font=c(1,2
,2,2,2),cex=c(1,2,2,2,2)); par(xpd=TRUE)');

xy.labels<-data.frame("Site
ID"=cmaxsite$siteid,"County"=paste(cmaxsite$countyname,cmaxsite$statename,sep=",
"),"Current DV"=cmaxsite$dval,"Fourth Max 2015"=cmaxsite$max4,"Critical Value
2015"=cmaxsite$critval,"Number of 8-Hour Exceedances"=cmaxsite$nexceeds);# JAM: I might
be able to add the W126 values here with a merge

asLinks<-data.frame("DV
Plot"=paste("file://g:/o3fasttrack/2015_data/dvplots/",cmaxsite$siteid,".pdf",sep=""),s
tringsAsFactors=FALSE);

mainmap<-
xy.send(plot.call=plot.call,plot.extras=plot.extras,asLinks=asLinks,dir="g:/o3fasttrack
/",fname.root="o3map",xy.labels=xy.labels,x.pos=coordinates(cmaxsite)[,1],y.pos=coordin
```

```
ates(cmaxsite)[,2],image.size="1200x900",window.size="1200x900")

positions<-rectpos(mainmap,c(rep(0.8,2),0.6,0.05),c(0.9,0.75,0.9,0.8));

mainmap<-
makeImap(mainmap,figure=1,xy.type="points",x.pos=positions$x.pos,y.pos=positions$y.pos,
spot.radius=100,asLinks=c("file://g:/o3fasttrack/violates.html","file://g:/o3fasttrack/
exceeds.html","file://g:/o3fasttrack/o3sumtab.html",paste("file://g:/o3fasttrack/2015_d
ata/o3_daily_",plot.run.date,".pdf",sep="")))

mainmap<-makeSplot(mainmap,dir="g:/o3fasttrack/",fname.root="o3map");

graphics.off();

#### Make a separate DV plot without any text or clickable links ####

png(file = "g:/o3fasttrack/o3mapnotext.png", height = 900, width = 1200)

plot(states,col = 'gray')

points(cmaxsite,col="black",bg=cmaxsite$col,pch=cmaxsite$pch,cex=2)

mtext("Maximum 8 hour Ozone Design Value (ppm) by County",line=2,cex=3);
mtext(format(plot.run.date,"%m-%d-%Y"),line=-1,cex=3);
legend(x=grconvertX(0.3,from="nfc"),y=grconvertY(0.53,from="nfc"),legend=c(">.075
ppm","0.071-0.075 ppm","0.065-0.070 ppm","<0.065
ppm","missing"),pch=c(rep(21,5),1),pt.bg=c("red","orange","yellow","green",NA),pt.cex=2
)

graphics.off()

#### Make the daily maxes map ####

windows(height=11,width=11,rescale="fixed");

par(mar=c(2,0,3,0));

plot(states,col="gray");

pts<-
merge(airnow[airnow$date==as.character(plot.run.date),],latlongs,by="siteid",sort=FALSE
,all.x=TRUE);

#pts <- subset(pts,!is.na(longitude) | !is.na(latitude)) # JAM: Quick fix for cases
where there are no latlongs. I should pull these for the Hope and Kenosha-Water Tower
sites though

pts$conc<-pts$conc/1000;

pts$col<-
as.character(cut(pts$conc,breaks=colbreaks,labels=collabs,include.lowest=TRUE,right=FAL
SE)); # Set colors for points. This won't change the legend. I could generalize this.

pts$pch<-ifelse(is.na(pts$conc),1,21);

coordinates(pts)<-pts[,c("longitude","latitude")];

proj4string(pts)<-CRS("+proj=longlat +ellps=clrk66");

pts<-spTransform(pts,CRS("+proj=lcc +lon_0=97w +lat_0=40n +lat_1=33n +lat_2=45n"));

pts<-pts[order(pts$conc),];

points(pts,pch=pts$pch,bg=pts$col,col="black",cex=2);

par(xpd=NA)

mtext("Maximum 8-hour Ozone Concentration (ppm)",line=0,cex=3);

mtext(format(plot.run.date,"%m-%d-%Y"),line=-3,cex=3);

legend(x=grconvertX(0.2,from="nfc"),y=grconvertY(0.5,from="nfc"),legend=c(">.075
```

```
ppm","0.071-0.075 ppm","0.065-0.070 ppm","<0.065
ppm","missing"),pch=c(rep(21,5),1),pt.bg=c(rev(collabs),NA),pt.cex=2);

text(grconvertX(0.01,from="ndc"),grconvertY(0.04,from="ndc"),labels=paste("Produced
",Sys.time()," by USEPA Region 5 Air Monitoring and Analysis
Section",sep=""),pos=4,col="black",font=1,cex=1)

savePlot(filename=paste("g:/o3fasttrack/2015_data/o3_daily_",plot.run.date,".pdf",sep="
"),type="pdf");

graphics.off();


curyear<-as.numeric(format(Sys.Date(),"%Y"));

#windows(width=11,height=8.5)

garbage<-lapply(sort(unique(airnow$siteid)),function(xx) {

pdf(file=paste("g:/o3fasttrack/2015_data/dvplots/",xx,".pdf",sep=""),

width = 11,

height = 8.5)

#print(xx)

temp<-subset(dvsLast,siteid==xx);

temp2<-subset(max4,siteid==xx);

curyearp1cval<-((naaqs+.001)*3)-(dvsLast[dvsLast$siteid==xx & dvsLast$year==(curyear-
1),"max4"]+hi4[hi4$siteid==xx,"max4"][4])

if(identical(curyearp1cval,numeric(0))){

curyearp1cval<-NA

}

if(nrow(temp2)>0) {

par(mar=c(7,4,4,2)+0.1);

plot(c(temp$year,temp2$year),c(temp$max4,temp2$max4),pch=21,bg="blue",col="black",ylim=
c(0.045,0.125),yaxp=c(0.045,0.125,10),xlim=c(2001,curyear+1),xaxp=c(2001,curyear+1,cury
ear+1-2001),cex=2,xlab="",ylab="Ozone Concentration (ppm)");

text(c(temp$year,temp2$year),c(temp$max4,temp2$max4),labels=c(temp$max4,temp2$max4),col
="black",pos=3,cex=0.75);

points(c(rep(curyear,2),curyear+1),c(critval[[xx]]$critval[,c("critval","dval")],curyea
rp1cval),pch=c(8,21),col=c("red","black"),bg="red",cex=2);

text(c(rep(curyear,2),curyear+1),c(critval[[xx]]$critval[,c("critval","dval")],curyearp
1cval),labels=c(critval[[xx]]$critval[,c("critval","dval")],curyearp1cval),col="black",
cex=0.75,pos=3);

abline(h=naaqs,lty=2,col="red",lwd=2);

par(xpd=TRUE);

mtext(paste("Annual 4th Highest Ozone Concentration for ",xx,"
(",unique(airnow$sitename[airnow$siteid==xx]),")",sep=""),line=3);

mtext(paste("Updated ",format(Sys.Date(),"%m-%d-%Y"),sep=""),line=2);

legend(x=grconvertX(0.5,from="ndc"),y=grconvertY(0.09,from="ndc"),legend=c("4th
Max","Current DV","Critical
Value"),pch=c(rep(21,2),8),pt.bg=c("blue","red","red"),col=c("black","black","red"),pt.
cex=2,xjust=0.5,yjust=0.5,horiz=TRUE);

text(grconvertX(0,from="ndc"),grconvertY(0.02,from="ndc"),labels="** The critical value
is the concentration the 4th high must exceed to result in a DV greater than the level
of the NAAQS",pos=4,cex=0.7);
```

```
par(xpd=FALSE);

#savePlot(filename=paste("g:/o3fasttrack/2015_data/dvplots/",xx,".pdf",sep=""),type="pd
f");

} else { plot.new();

mtext(paste("Either missing 2 previous years or there are not 4 valid days in the
current year",sep=""),line=3);

#savePlot(filename=paste("g:/o3fasttrack/2015_data/dvplots/",xx,".pdf",sep=""),type="pd
f");

} # Make a .pdf of this and save it to that file

dev.off()

});

graphics.off();

# The preceeding statement could probably be a lot faster if it used pdf() instead of
windows() and savePlot().

# Implemented. It's much faster.


#I'll need to change this to use the standard

webpage<-file("g:/o3fasttrack/exceeds.html",open="w");

cat("<HTML>

<HEAD>

<META HTTP-EQUIV=\"Content-Type\" CONTENT=\"text/html; charset=iso-8859-1\">

<META NAME=\"GENERATOR\" CONTENT=\"Mozilla/4.05 [en] (Win95; U) [Netscape]\">

<META NAME=\"Author\" CONTENT=\"Michael Rizzo\">

<TITLE align=center>2015 8 Hour Ozone Concentrations > 0.065 ppm</TITLE>

</HEAD>

<BODY TEXT=\"#000000\" BGCOLOR=\"#FFFFFF\" LINK=\"#0000FF\" VLINK=\"#551A8B\"
ALINK=\"#FF0000\" BACKGROUND=\"air.jpg\">


<CENTER><B><I><U><FONT COLOR=\"#CC6600\"><FONT SIZE=+3>Internal Use Only

- DO NOT CITE OR QUOTE</FONT></FONT></U></I></B></CENTER>

<br>

<center><font size=+3>2015 8 Hour Ozone Concentrations > 0.065 ppm</font></center>

<br><br>

<li><a href=\"#17\">Illinois</a></li>

<li><a href=\"#18\">Indiana</a></li>

<li><a href=\"#21\">Kentucky</a></li>

<li><a href=\"#26\">Michigan</a></li>

<li><a href=\"#27\">Minnesota</a></li>

<li><a href=\"#29\">Missouri</a></li>

<li><a href=\"#39\">Ohio</a></li>

<li><a href=\"#55\">Wisconsin</a></li>

<CENTER><TABLE BORDER CELLPADDING=5 cellspacing=5 WIDTH=\"50%\" >

<tr>
```

```
<th colspan=2 align=center><font size=+3 color=\"blue\">Geographic Area</font><br><font
size=+2>State: County<br>Monitor ID<br></font><font size=+1 color=\"red\">Total
Exceedances</font></th>

</tr>

<tr>

<th>Date</th>

<th>8 Hour Conc. > 0.065 ppm</th>

</tr>",sep="",file=webpage);

garbage<-lapply(unique(exceeds$siteid),function(x) {

temp<-subset(exceeds,siteid==x);

temp$area_name<-ifelse(is.na(temp$area_name),"",temp$area_name);

cat(paste('<tr>

<td colspan=2 align=center><a

name="',substr(x,1,2),'"><b><font

size=+3 color="blue"><br>',unique(temp$area_name),

'</font><br><font size=+2>',unique(temp$statename),': ',unique(temp$countyname.y),

'</font><br><a
href="file://g:/o3fasttrack/2015_data/dvplots/',unique(x),'.pdf">',unique(x),'
(',unique(temp$sitename),')</a></font><br><font site=+1 color="red"> 2015

Total Exceedances to Date: ',nrow(temp),'</font></b></a></td>

</tr>',sep=""),

sep="",file=webpage);

garbage2<-by(temp,temp$date,function(z) {

cat(paste('<tr>

<td align=center width="50%">',z$date,'</td>

<td align=center width="50%">',z$conc/1000,' ppm</td>

</tr>',sep=""),

sep="",file=webpage);

});

});

cat(paste('</table></center><a></a>

<br><br><br>Information updated on ',Sys.Date(),

'<br> original code by <A HREF="mailto:rizzo.michael@epa.gov">Michael Rizzo</A>, USEPA
Region 5 Air Monitoring and Analysis Section<br>

email questions to <A HREF="mailto:mcgrath.jesse@epa.gov">Jesse McGrath</A> or <A
HREF="mailto:fuoco.marta@epa.gov">Marta Fuoco</A></body>

</html>',sep=""),

sep="",file=webpage);

close(webpage);


webpage<-file("g:/o3fasttrack/violates.html",open="w");

cat('<HTML>
```

```
<HEAD>
<META HTTP-EQUIV="Content-Type" CONTENT="text/html; charset=iso-8859-1">
<META NAME="GENERATOR" CONTENT="Mozilla/4.05 [en] (Win95; U) [Netscape]">
<META NAME="Author" CONTENT="Michael Rizzo">
<TITLE align=center>Sites Violating the 8-Hour Ozone NAAQS 2012-2015</TITLE>
</HEAD>
<BODY TEXT="#000000" BGCOLOR="#FFFFFF" LINK="#0000FF" VLINK="#551A8B" ALINK="#FF0000"
BACKGROUND="air.jpg">

<CENTER><B><I><U><FONT COLOR="#CC6600"><FONT SIZE=+3>Internal Use Only
- DO NOT CITE OR QUOTE</FONT></FONT></U></I></B></CENTER>
<br>
<center><font size=+3>Sites Violating the 8-Hour Ozone NAAQS 2012-2015</font></center>

<CENTER><TABLE BORDER CELLPADDING=5 cellspacing=5 WIDTH="50%" >
<tr>
<th align=center>Geographic Area</th>
<th align=center>State</th>
<th align=center>County</th>
<th align=center>Monitor ID</th>
<th align=center>Site Name</th>',
paste("<th>Current ",curyear-2,"-",curyear,"<br>Design Value</th>
</tr>",sep=""),
sep="",file=webpage);
crituse<-lapply(critval,function(xx) {
if(xx$critval$dval> naaqs & !is.na(xx$critval$dval)) {
return(xx$critval)
} else {
return(NULL);
}
})
crituse<-do.call("rbind",crituse)
if(nrow(crituse)==0) {
cat('<tr>
<th colspan=6 align=center><font size=+3>There are no sites violating the 8-hour ozone
NAAQS at this time.</font></th>
</tr></table></center>',
paste('<br><br><br>Information updated on ',Sys.Date(),
'<br>original code by <A HREF="mailto:rizzo.michael@epa.gov">Michael Rizzo</A>, USEPA
Region 5 Air Monitoring and Analysis Section<br>
email questions to <A HREF="mailto:mcgrath.jesse@epa.gov">Jesse McGrath</A> or <A
HREF="mailto:fuoco.marta@epa.gov">Marta Fuoco</A></body>
```

```
</html>',sep=""),

sep="",file=webpage)

} else {

crituse$county<-substr(crituse$siteid,1,5);

crituse<-merge(crituse,nonatt[,c("county","area_name")],by="county",all.x=TRUE);

crituse<-merge(crituse,fips,by.x="county",by.y="fips");

crituse<-merge(crituse,unique(airnow[,c("siteid","sitename")]),by="siteid");

crituse<-crituse[order(crituse$area_name,crituse$siteid),];

crituse$areaname<-ifelse(is.na(crituse$area_name),"",crituse$area_name);

garbage<-apply(as.matrix(crituse),1,function(x) {

cat(paste('<tr>

<td align=center>',x["area_name"],'</td>

<td align=center>',x["statename"],'</td>

<td align=center>',x["countyname"],'</td>

<td align=center><a
href="file://g:/o3fasttrack/2015_data/dvplots/',x["siteid"],'.pdf">',x["siteid"],'</a><
/td>

<td align=center>',x["sitename"],'</td>

<td align=center>',x["dval"],'</td>

</tr>',sep=""),

sep="",file=webpage)

});

cat(paste('</table></center><a></a>

<br><br><br>Information updated on ',Sys.Date(),

'<br>original code by <A HREF="mailto:rizzo.michael@epa.gov">Michael Rizzo</A>, USEPA
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HREF="mailto:fuoco.marta@epa.gov">Marta Fuoco</A></body>

</html>',sep=""),

sep="",file=webpage);

}

close(webpage);


temp<-airnow;

temp$county<-substr(temp$siteid,1,5);

siteorder<-merge(unique(temp[,c("siteid","county")]),nonatt,by="county",all.x=TRUE);

siteorder$fips_state<-substr(siteorder$siteid,1,2);

siteorder$fips_cnty<-substr(siteorder$siteid,3,5);

siteorder<-
siteorder[order(siteorder$fips_state,siteorder$area_name,siteorder$siteid),"siteid"];

rm("temp")

gc();
```

```
webpage<-file("g:/o3fasttrack/o3sumtab.html",open="w");
cat("<HTML>
<HEAD>
<META HTTP-EQUIV=\"Content-Type\" CONTENT=\"text/html; charset=iso-8859-1\">
<META NAME=\"GENERATOR\" CONTENT=\"Mozilla/4.05 [en] (Win95; U) [Netscape]\">
<META NAME=\"Author\" CONTENT=\"Michael Rizzo\">
<TITLE align=center>2015 8 Hour Ozone Summary Table</TITLE>
</HEAD>
<BODY TEXT=\"#000000\" BGCOLOR=\"#FFFFFF\" LINK=\"#0000FF\" VLINK=\"#551A8B\"
ALINK=\"#FF0000\" BACKGROUND=\"air.jpg\">

<CENTER><B><I><U><FONT COLOR=\"#CC6600\"><FONT SIZE=+3>Internal Use Only
- DO NOT CITE OR QUOTE</FONT></FONT></U></I></B></CENTER>
<br>
<center><font size=+3>2015 8 Hour Ozone Summary Table</font></center>
<br><br>
<li><a href=\"#17\">Illinois</a></li>
<li><a href=\"#18\">Indiana</a></li>
<li><a href=\"#21\">Kentucky</a></li>
<li><a href=\"#26\">Michigan</a></li>
<li><a href=\"#27\">Minnesota</a></li>
<li><a href=\"#29\">Missouri</a></li>
<li><a href=\"#39\">Ohio</a></li>
<li><a href=\"#55\">Wisconsin</a></li>
<CENTER><TABLE BORDER CELLPADDING=5 cellspacing=5 WIDTH=\"50%\" >
<tr>
<th align=center>Geographic Area</th>
<th align=center>State</th>
<th align=center>County</th>
<th align=center>Monitor ID</th>
<th align=center>Site Name</th>",
paste("<th align=center>",(curyear-5),"-",(curyear-3),"\nDV</th>
<th align=center>",(curyear-4),"-",(curyear-2),"\nDV</th>
<th align=center>",(curyear-3),"-",(curyear-1),"\nDV</th>
<th align=center>",curyear-2," 4th Max</th>
<th align=center>",curyear-1," 4th Max</th>
<th align=center>",curyear," 4th Max</th>
<th>Current ",curyear-2,"-",curyear,"<br>Design Value</th>
<th align=center>",curyear," <br>Critical Value</th>
<th align=center>",curyear+1," <br>Critical Value</th>",sep=""),
```

```
'</tr>',sep="",file=webpage);

garbage<-lapply(siteorder,function(x) {

cat(paste('<tr>

<td align=center><a
name="',substr(x,1,2),'">',nonatt[nonatt$county==substr(x,1,5),"area_name"],'</a></td>

<td align=center>',fips[fips$fips==substr(x,1,5),"statename"],'</td>

<td align=center>',fips[fips$fips==substr(x,1,5),"countyname"],'</td>

<td align=center><a
href="file://g:/o3fasttrack/2015_data/dvplots/',x,'.pdf">',x,'</a></td>

<td align=center>',unique(airnow[airnow$siteid==x,"sitename"]),'</td>',sep=""),

paste('<td align=center>',critval[[x]]$prevdvs$dv,'</td>',sep=""),

paste('<td align=center>',dvsLast[dvsLast$siteid==x & dvsLast$year==(curyear-
2),"max4"],'</td>

<td align=center>',dvsLast[dvsLast$siteid==x & dvsLast$year==(curyear-1),"max4"],'</td>

<td align=center>',max4[max4$siteid==x,"max4"],'</td>

<td align=center>',critval[[x]]$critval$dval,'</td>

<td align=center>',critval[[x]]$critval$critval,'</td>

<td align=center>',((naaqs+.001)*3)-(dvsLast[dvsLast$siteid==x &
dvsLast$year==(curyear-1),"max4"]+hi4[hi4$siteid==x,"max4"][4]),'</td>

</tr>',sep=""),

sep="",file=webpage);

});

cat(paste('</table></center><a></a>

<br><br><br>Information updated on ',Sys.Date(),

'<br>original code by <A HREF="mailto:rizzo.michael@epa.gov">Michael Rizzo</A>, USEPA
Region 5 Air Monitoring and Analysis Section<br>

email questions to <A HREF="mailto:mcgrath.jesse@epa.gov">Jesse McGrath</A> or <A
HREF="mailto:fuoco.marta@epa.gov">Marta Fuoco</A></body>

</html>',sep=""),

sep="",file=webpage);

close(webpage);

browseURL(url = "G:\\o3fasttrack\\o3map.html", browser = getOption("browser"),

encodeIfNeeded = FALSE)

r565 <- nrow(crituse[crituse$statename %in%
c("Illinois","Indiana","Michigan","Minnesota","Ohio","Wisconsin"),])

nr565 <- nrow(crituse[!crituse$statename %in%
c("Illinois","Indiana","Michigan","Minnesota","Ohio","Wisconsin"),])

r570 <- nrow(crituse[crituse$dval > .070 & crituse$statename %in%
c("Illinois","Indiana","Michigan","Minnesota","Ohio","Wisconsin"),])

a75 <- nrow(crituse[crituse$dval > .075,])

writeClipboard(paste(Sys.Date(),"Ozone Season Update\n",

"There are now",r565,"sites violating the proposed 65 ppb standard in Region 5
```

```
and",nr565,"violating sites in neighboring regions.\n",

r570,"sites have a design value above 70 ppb.\n",a75,"sites have a design value above
75 ppb."

))

rm(list=ls());

gc();



if(FALSE){

}
```